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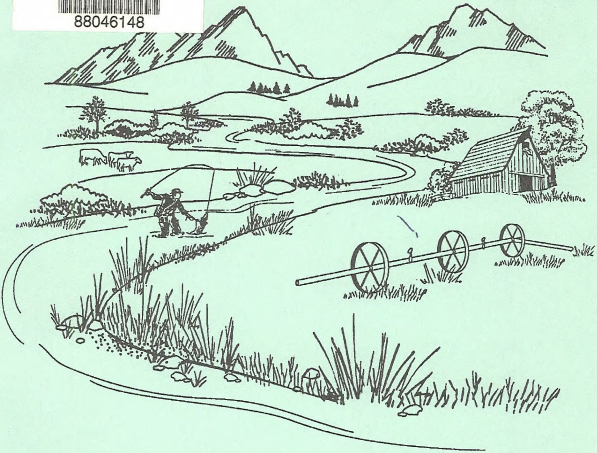

Wasatch County Water Efficiency Project and Daniel Replacement Project

Central Utah Water Conservancy District (Lead Agency)
Utah Reclamation Mitigation and Conservation Commission (Joint Lead Agency)
U.S. Department of the Interior (Joint Lead Agency)

Utah Reclamation
Mitigation and
Conservation
Commission

Final Environmental Impact Statement

November 1996

Central Utah Water Conservancy District

355 WEST 1300 SOUTH OREM, UTAH 84058
TELEPHONE (801) 226-7100

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November 22, 1996

Dear Reader:

This Final Environmental Impact Statement (FEIS) on the proposed Wasatch County Water Efficiency Project and Daniel Replacement Project (WCWEP and DRP) was filed with EPA on November 22, 1996. The full text of the draft EIS has not been reprinted because public and agency comments did not require modifications to any of the alternatives or affect the impacts presented in the draft EIS. The attached material includes responses to the comments received and text changes in the form of errata. The text changes have to be used in conjunction with the June 10, 1996 DEIS. The complete final EIS includes the draft EIS and the material contained in this abbreviated FEIS.

A copy of this FEIS has been sent to everyone who received the DEIS. Additional copies of the DEIS and this FEIS may be obtained from:

Nancy Hardman
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058
Telephone: 801-226-7187
Fax: 801-226-7150

Sincerely,

Karen M Ricks

Karen M. Ricks, Project Manager
Central Utah Water Conservancy District

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U.S. DEPARTMENT OF THE INTERIOR

FINAL
ENVIRONMENTAL IMPACT STATEMENT
ON THE
WASATCH COUNTY WATER EFFICIENCY PROJECT
AND DANIEL REPLACEMENT PROJECT

Prepared by
Central Utah Water Conservancy District
November 1996

Don A Christiansen

Don A. Christiansen, General Manager
Central Utah Water Conservancy District

Michael C. Weland, Executive Director
Utah Reclamation Mitigation and Conservation Commission

Ronald Johnston

Ronald Johnston, CUPCA Program Director
U.S. Department of the Interior

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COVER SHEET

Wasatch County Water Efficiency Project and Daniel Replacement Project (WCWEP and DRP)

( ) Draft (X) Final

Joint Lead Agencies

Central Utah Water Conservancy District
Utah Reclamation Mitigation and Conservation Commission
U.S. Department of the Interior

Cooperating Agencies

U.S. Department of Army, Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Department of Agriculture, Natural Resources Conservation Service
U.S. Department of Agriculture, Forest Service
Utah Department of Natural Resources
Wasatch County Special Service Area No. 1

Counties that Could be Affected

Wasatch and Utah, UT

Abstract

This Final Environmental Impact Statement (FEIS) covers two proposed federal projects (Wasatch County Water Efficiency Project and Daniel Replacement Project) in Wasatch County, Utah. The Proposed Action (Wasatch County Water Efficiency Project With Daniel Replacement Pipeline) would replace water currently diverted from the upper Strawberry River basin by Daniel Irrigation Company (DIC). Replacement water would be supplied by water conserved from the Heber Valley CUP agricultural water supply stored in Jordanelle Reservoir by providing pressurized water that would make it possible for farmers to convert from flood irrigation to sprinklers. Conserved water (non-CUP water diversions from the Provo River and local tributaries) would be used to supplement flows of five Heber Valley streams. Two alternatives (DRP With Pipeline and DRP With Canal) would provide different conveyance facilities for the DIC replacement water. The No Action Alternative would not change DIC diversions, water efficiency and instream flows. Major environmental issues involve water resources, water quality, wetlands, aquatic resources, wildlife, threatened and endangered species, agriculture, socioeconomics and recreation resources.

Other Requirements Served

This FEIS is intended to serve other environmental review and consultation requirements pursuant to 40 CFR 1502.25 (a).

Date DEIS Made Available to EPA and the Public: INT DES 96–26, June 10, 1996

Date FEIS Made Available to EPA and the Public: INT FES 96– , November 22, 1996

Preface

This document contains the Final Environmental Impact Statement (Final EIS or FEIS) for the Wasatch County Water Efficiency Project (WCWEP) and Daniel Replacement Project (DRP). It should be noted that when the WCWEP and DRP Draft Environmental Impact Statement (Draft EIS or DEIS) was released, the same document also contained the Provo River Restoration Project (PRRP) Draft EIS. After completion of the public review process, the decision was made to prepare separate final EISs.

This Final EIS is an abbreviated final EIS. This means the Draft EIS was not reprinted in its entirety. This Final EIS only contains the following sections: Section 1 (Summary), Section 2 (Comparative Analysis of Impacts of the Proposed Action and Alternatives), Section 3 (Consultation and Coordination), and Section 4 (Errata Summary). The Summary has been revised from the one contained in the Draft EIS and incorporates changes that were suggested in the comments on the Draft EIS. It identifies the agency's Proposed Action and provides an overview of the purpose and need, Proposed Action and alternatives, major areas of concern, major impact conclusions, issues to be resolved, and consultation and coordination. The Comparative Analysis section (Chapter 2 in the DEIS) repeats the comparative analysis contained in the DEIS with changes made as a result of the comments received on the Draft EIS. The Consultation and Coordination section contains all the comment letters that were received on the Draft EIS along with the responses to each comment. The Errata Summary section contains the text changes to the Draft EIS that were made as a result of the comments received on the Draft EIS. Four appendices follow the Errata Summary section: Appendix 1 (Environmental Commitment List), Appendix 2 (U.S. Fish and Wildlife Service Letter of Concurrence of "No Effect"), Appendix 3 (Cultural Resources Programmatic Memorandum of Agreement), and Appendix 4 (List of Fish and Wildlife Service Recommendations from the Draft Fish and Wildlife Coordination Act Report).

This Final EIS has to be used in conjunction with the Draft EIS. Except as modified by the Errata Summary Section, all the material (including the large folded maps) printed in the Draft EIS is correct and remains in effect.

Copies of the Final EIS are available from the following address:

Nancy Hardman
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058
Telephone: (801) 226-7187
Fax: (801) 226-7150

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Wasatch County Water Efficiency Project and Daniel Replacement Project

Final Environmental Impact Statement

Section 1
Summary

Section 1
Summary

The following summarizes the Wasatch County Water Efficiency Project and Daniel Replacement Project (WCWEP and DRP) Environmental Impact Statement (EIS). The summary identifies the Proposed Action and provides an overview of the purpose and need, Proposed Action and alternatives, major areas of concern, major impact conclusions, issues to be resolved, and consultation and coordination.

1.1 Proposed Action

The Central Utah Water Conservancy District (CUWCD) Board of Directors have adopted the Wasatch County Water Efficiency Project With Daniel Replacement Pipeline as the Proposed Action.

1.2 Purpose and Need

The Proposed Action and alternatives would respond to the following needs:

- To restore flows in the upper Strawberry River that have been diverted by the Daniel Irrigation Company (DIC)
- To provide water and water conveyance facilities from Jordanelle Reservoir to the existing Daniel Irrigation Company (DIC) water storage facilities

Restoring flows in the upper Strawberry River basin was identified as the highest priority aquatic mitigation measure in the Aquatic Mitigation Plan for the Strawberry Aqueduct and Collection System (U.S. Fish and Wildlife Service 1988). The Aquatic Mitigation Plan for the Strawberry Aqueduct and Collection System of the Bonneville Unit (SACS) was first prepared in 1979 with refinements in 1984 and a final Plan issued in 1988 by the FWS. The plan made recommendations with analysis for totally mitigating the aquatic impacts caused to streams by construction and operation of the SACS. The plan contained the evaluation of four components: 1) instream flows to protect 50 percent of historic adult trout habitat, 2) fisherman access to streams, 3) instream habitat improvement measured, and 4) replacement of a trout egg-taking station on Strawberry River within the Strawberry Reservoir enlargement.

The restoration of flows in the upper Strawberry River (Strawberry Exchange) was a very important element of the SACS mitigation plan. It provided restoration of streamflow in 16.3 miles of upper Strawberry River and another 9.8 miles of other streams tributary to Strawberry Reservoir. Restoration of upper Strawberry River flows would mitigate 10,000 angler days of fishing and provide trout spawning habitat in those streams inundated by Strawberry Reservoir.

Congress recognized the need to replace DIC's transbasin diversions to help restore natural flows in the upper Strawberry River basin. It instructed the Central Utah Water Conservancy District (CUWCD) "to construct a pipeline from the Jordanelle Reservoir to the existing DIC water storage facilities for the purpose of providing a permanent replacement supply of water in an amount equal to the Strawberry Basin water..." (Section 303(b)(3)(A) of the Central Utah Project Completion Act [CUPCA] of 1992).

Following are the purposes of the Proposed Action and alternatives:

- To improve efficiencies, conserve water and improve water management in Heber Valley by constructing water management facilities under Sections 202(a)(3) and 207 of CUPCA

- To supplement flows in some Heber Valley streams through conservation and efficiency measures to improve environmental and recreation resources

- To protect the water rights of downstream users

- To minimize costs of project features

- To minimize adverse impacts on groundwater, wetlands and other environmental resources

- To return the portion of the Strawberry River and its tributaries affected by the DIC diversion facilities to a naturally functioning state

1.3 Project Description

1.3.1 Proposed Action

The CUWCD proposes to implement the Wasatch County Water Efficiency Project With Daniel Replacement Pipeline (Proposed Action).

The Proposed Action would deliver pressurized water to irrigation company service areas through pipelines extending from the Timpanogos, Wasatch, and Humbug canals. Pumps along these canals would pressurize water for land located at elevations above the Sagebrush and Spring Creek Canal. Land at lower elevations would be served by gravity pressure.

The Proposed Action would help improve water use efficiency in nine of the 12 Heber Valley irrigation companies. Delivery of pressurized water would make it possible for farmers to convert from flood irrigation to sprinklers. Although not part of the Proposed Action, on-farm conversion to sprinkler irrigation systems would occur with funding provided under Public Law 83-566 (Watershed Protection and Flood Protection Act). Financing of the on-farm conversions would be administered by the Natural Resources Conservation Service (NRCS) as it implements the Tri-Valley Watershed Plan. Conversion to sprinkler irrigation would reduce average annual water use in affected areas from about 5 to 7 acre-feet per acre to 3 acre-feet per acre. The Proposed Action also would replace some distribution canals with pipelines, which would directly conserve water by improving the efficiency of the Heber Valley irrigation conveyance system.

Non-Central Utah Project (CUP) water conserved by the Proposed Action would be used to supplement flows of five Heber Valley streams: Rock Ditch, Spring Creek, lower Lake Creek, London Ditch and Creamery Ditch, and to help avoid impacts on downstream users.

The Proposed Action would provide DIC with replacement water after their diversions from the upper Strawberry River basin are terminated. Water conserved by the Proposed Action from the Heber Valley baseline CUP agricultural supply would be used to provide the replacement water. The replacement water would be diverted at the Timpanogos Diversion on the Provo River near Jordanelle Reservoir and conveyed through the Timpanogos Canal, and new pumping stations and pipelines. Diversions from the upper Strawberry River basin would stop once the Proposed Action is implemented.

As part of the Proposed Action, the DIC diversion facilities would be abandoned and removed or retained for historic interpretation in non-functioning condition, and natural stream flows in the upper Strawberry River basin and its tributaries would be restored after the transbasin diversion to Daniels Creek is terminated. The restoration of flows in the upper Strawberry River basin fulfills mitigation requirements of the Bonneville Unit. This would include stabilizing two headcuts and modifying existing canals, diversion facilities, reservoirs, a tunnel and siphon, stream gauges and roads. It also would include construction of two small buried pipelines (totaling three miles) within the existing canal network to deliver water from a spring to six livestock watering troughs.

1.3.2 Alternatives

In addition to the Proposed Action, several alternatives were identified and included in the analysis. These alternatives are: the Daniel Replacement Project (DRP) With Pipeline Alternative, the DRP With Canal Alternative, and a No Action Alternative. None of the alternatives would include the water efficiency or Heber Valley stream flow improvements included in the Proposed Action.

The DRP With Pipeline Alternative would replace water currently diverted from the upper Strawberry River basin by DIC with un-contracted Bonneville Unit CUP agricultural water stored in Jordanelle Reservoir. The water would be diverted at the Timpanogos Diversion on the Provo River near Jordanelle Reservoir. A new 11.9-mile-long pipeline with pumping stations would convey replacement water from the Timpanogos Diversion to the DIC service area. DIC diversion facilities in the upper Strawberry River basin would be abandoned and removed except as retained in non-functioning condition for historic interpretation, as described under the Proposed Action.

The DRP With Canal Alternative would replace water currently diverted by DIC from the upper Strawberry River basin with un-contracted Bonneville Unit CUP agricultural water stored in Jordanelle Reservoir. The replacement water would be diverted at the Timpanogos Diversion and conveyed to the DIC service area through an enlarged Timpanogos Canal, new pumping stations and pipelines. Water currently conveyed by the Timpanogos Canal would continue to be conveyed and delivered by the enlarged Timpanogos Canal. DIC diversion facilities in the upper Strawberry River basin would be abandoned and removed except as retained in non-functioning condition for historic interpretation, as described under the Proposed Action.

Under the No Action Alternative there would be no change in water efficiency, in stream flows, and canal capacities and operations in Heber Valley. There also would be no change in DICs diversions from the upper Strawberry River basin to Daniels Creek, and other baseline conditions would continue.

1.4 Major Areas of Concern

Several areas of concern and issues were identified in the scoping process conducted during the early stages of preparing the EIS. The following major issues were identified in the Draft EIS (DEIS).

- How would Daniel Creek flows be impacted by terminating transbasin diversions under the Proposed Action and DRP alternatives?
- Would the Proposed Action and DRP alternatives affect the supplies of water users?
- What would be the effects on groundwater levels and wells caused by converting from flood to sprinkler irrigation made possible by the Proposed Action?
- Would the Proposed Action and DRP alternatives reduce return flows from the Heber Valley groundwater basin to surface water?
- What effects would the redistribution of water in Heber Valley under the Proposed Action and DRP alternatives have on water quality in streams and Deer Creek Reservoir?
- What water quality impacts would occur in Daniels Creek once the Proposed Action and DRP alternatives eliminate the transbasin diversion?

- What would be the effects on wetlands from the irrigation conversion made possible by the Proposed Action?

- What other types of wetlands impacts would occur under the Proposed Action and DRP alternatives?

- Could adequate fish habitat be maintained in Daniels Creek after the transbasin diversion is terminated under the Proposed Action and DRP alternatives?

- What would the impacts be on trout and the leatherside chub once the Proposed Action supplements streamflows in Heber Valley streams?

- What would be the impact of the Proposed Action and DRP alternatives on aquatic resources in the upper Strawberry River basin once the streams in the basin are restored?

- What impacts would the Proposed Action and DRP alternatives have on wildlife in Heber Valley, Daniels Creek Canyon and the upper Strawberry River basin?

- What impacts would the Proposed Action and DRP alternatives have on spotted frogs, Ute ladies'-tresses and bald eagles?

- How would agricultural cropping patterns and operations be affected during and after construction of the Proposed Action and DRP alternatives?

- How would the agricultural impacts of the Proposed Action and DRP alternatives affect the local economy?

- How would an increase in recreation opportunities under the Proposed Action and DRP alternatives affect the local economy?

- Would the Proposed Action and DRP alternatives induce growth in Heber Valley?

- Could an adequate recreational fishery be maintained in Daniels Creek canyon once the transbasin diversions are terminated under the Proposed Action and DRP alternatives?

- How would the Proposed Action and DRP alternatives affect recreation in Heber Valley and the upper Strawberry River basin?

A complete summary of the scoping process and issues raised can be found in the Scoping Summary Report which is available from the CUWCD upon request.

In addition to the concerns raised during the scoping process a major area of concern was raised during the public review of the DEIS. The issue to be resolved deals with the question: Does the CUWCD have the right to use conserved water as the replacement supply for the DIC? CUWCD has the right to use water conserved from CUP agricultural deliveries under provisions of Section 207 of the CUPCA. The Proposed Action and the DRP alternatives cannot be implemented without approval of related water rights change applications by the State Engineer's office. Individual irrigation companies holding direct-flow water rights would file change applications that would allow for reregulation and release of the conserved water in Jordanelle Reservoir at the same priority associated with their direct-flow right. These applications would need to specify a change in place of use to include DIC, Heber Valley streams and the North Fields area. The change applications would go through the State Engineer's review and comment procedures. Such approval is expected since the Proposed Action and alternatives would not reduce downstream water supplies and would comply with applicable environmental requirements. If the applications are not approved or are approved with conditions, minor changes to the anticipated operation of the Proposed Action and DRP alternatives would be considered.

Another issue to be resolved is: What happens if the No Action Alternative is selected? The Aquatic Mitigation Plan for the Strawberry Aqueduct and Collection System-December 1988 was initially the responsibility of the Bureau of Reclamation (Reclamation), and Reclamation has in fact carried out some of the mitigation commitments and obligations. As documented on page three of the Final Supplement to the Final Environmental Impact Statement (INT-FES 90-7, dated February 22, 1990) for the Diamond Fork System, identify the highest priority aquatic mitigation measure as the restoration of historic stream flows in the Upper Strawberry River which would be accomplished by terminating the Daniels Irrigation Company's transbasin diversions and implementation of the Strawberry Exchange. Reclamation's July 1990 Record of Decision (ROD) for the Diamond Fork System obligated Reclamation to implement the Aquatic Mitigation Plan. This obligation was further documented in the Department of the Interior's January 1995 ROD for the Diamond Fork Pipeline. With the enactment of CUPCA, the Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission) was established and is responsible to coordinate the implementation of the mitigation and conservation provisions of CUPCA including Reclamation's mitigation obligations which have not been completed (see Section 304 of CUPCA).

Therefore, if the No Action Alternative is selected, the Mitigation Commission would still have an obligation to implement the Strawberry Exchange in some fashion or to seek relief from the previous commitment.

1.5 Major Impact Conclusions

1.5.1 Water Resources

The Proposed Action would have the following impacts. As a result of terminating transbasin diversions from the upper Strawberry River basin to Heber Valley and the Provo River basin, flows in the Strawberry River and its tributaries would increase by an average of 2,900 acre-feet per year. Average flows in Daniels Creek above the DIC diversion would decrease by 2,900 acre-feet per year (about 35 percent) during months when diversions currently occur. Annual water supply shortages in Heber Valley would be decreased (from 3,280 acre-feet per year under baseline conditions to 1,720 acre-feet per year) through improved water use efficiencies. Total average monthly flows in London, Rock and Creamery ditches, Spring Creek and lower Lake Creek would be increased from about 0.6 to 16.9 cubic feet per second (cfs). Groundwater levels in Heber Valley would be lowered as a result of irrigation efficiencies implemented by the Proposed Action and on-farm improvements accomplished under the Tri-Valley Watershed Plan. The largest reductions in groundwater levels would be about 40 to 60 feet in the southeast portion of Heber Valley. This reduction could result in some wells becoming inoperable. Affected wells would be determined based on a groundwater monitoring program. On an annual average basis, total Heber Valley inflow to Deer Creek Reservoir and lower Provo River flows below Deer Creek Reservoir would not change. Minor changes would occur on an average monthly basis.

The DRP With Pipeline Alternative would have the following impacts. As a result of terminating transbasin diversions from the upper Strawberry River basin to Heber Valley and the Provo River basin, flows in the Strawberry River and its tributaries would increase by an average of 2,900 acre-feet per year. Average flows in Daniels Creek above the DIC diversion would be decreased by 2,900 acre-feet per year (about 35 percent) during months when diversions currently occur. Except for DIC, shortages to Heber Valley irrigation companies would be increased from approximately 3,280 acre-feet per year on average under baseline conditions to an average of 4,190 acre-feet per year (24 percent increase) because less CUP agricultural water would be available. Groundwater levels would be reduced by approximately five feet from baseline levels. This alternative would cause a minor reduction of about 1 cfs (less than 1/2 percent) in total average annual Provo River inflow to Deer Creek Reservoir and about 3 cfs (3 percent) in annual average Provo River flows below Deer Creek Reservoir. Even though average monthly inflows to Deer Creek Reservoir are essentially unchanged, impacts to downstream water users could result unless corrective measures, which are part of the design of the alternative, are implemented.

The DRP With Canal Alternative would have the following impacts. As a result of terminating transbasin diversions from the upper Strawberry River basin to Heber Valley and the Provo River basin, flows in the Strawberry River and its tributaries would increase by an average of 2,900 acre-feet per year. Average flows in Daniels Creek above the DIC diversion would be decreased by 2,900 acre-feet per year (about 35 percent) during months when diversions currently occur. Except for DIC, shortages to Heber Valley irrigation companies would be increased from approximately 3,280 acre-feet per year on average under baseline conditions to an average of 4,600 acre-feet per year (40 percent increase) because less CUP agricultural water would be available. Groundwater levels would be reduced by approximately five feet from baseline levels. This alternative would cause a minor reduction of about 1 cfs (less than 1/2 percent) in total average annual Provo River inflow to Deer Creek Reservoir and about 3 cfs (3 percent) in annual average Provo River flows below Deer Creek Reservoir. Even though average monthly inflows to Deer Creek Reservoir are essentially unchanged, impacts to downstream water users could result unless corrective measures, which are part of the design of the alternative, are implemented.

The No Action Alternative would not cause any changes to baseline conditions in Heber Valley or the upper Strawberry River basin.

1.5.2 Water Quality

The Proposed Action would have the following impacts. Concentrations of nitrates, total suspended solids, and total phosphorus in Provo River inflow to Deer Creek Reservoir would be reduced by about 4 to 6 percent. Total suspended solids (TSS) and nitrate concentrations in Spring Creek, Lake Creek, London Ditch, and Creamery Ditch also would be reduced. Total suspended solids loads to Deer Creek Reservoir would decrease slightly during average and wet years and would increase slightly during a dry year. Eutrophication and mixing status in Deer Creek Reservoir would not be affected. Temperatures in Daniels Creek would either remain the same or decrease slightly once the transbasin diversions are terminated.

The DRP With Pipeline and DRP With Canal alternatives would have the following impacts. They would reduce concentrations of nitrates, total suspended solids and total phosphorus in the Provo River inflow to Deer Creek Reservoir by about 11 to 12 percent. They would not affect any of the Provo River tributaries. They would not change TSS loading to Deer Creek Reservoir during average and wet years and would slightly decrease loading during dry years.

The No Action Alternative would not cause any changes to baseline water quality conditions. Current baseline trends would continue.

1.5.3 Wetlands

The Proposed Action would have the following impacts. About 20.7 acres of low function and value Wet Meadow wetlands would be indirectly eliminated in Heber Valley from a drawdown of groundwater elevations. About 3.4 acres of Emergent Marsh and 2.6 acres of Shrub Wetland would be created, and 36.8 acres of Wet Meadow and 33.6 acres of Shrub Wetland would be enhanced in the upper Strawberry River basin. About 2.1 acres of Riparian Woodland would be converted to an upland habitat type in the upper Strawberry River basin.

The DRP With Pipeline Alternative would have the following impacts. About 6.9 acres of wetlands (Wet Meadow, Emergent Marsh, and Shrub Wetland) would be directly disturbed and restored during construction in Heber Valley. About 2.1 acres of riparian woodland would be converted to an upland type in the upper Strawberry River basin. About 3.4 acres of Emergent Marsh and 2.6 acres of Shrub Wetland would be created, and 36.8 acres of Wet Meadow and 33.6 acres of Shrub Wetland would be enhanced in the upper Strawberry River basin.

The DRP With Canal Alternative would have the following impacts. The alternative would directly disturb and restore about 6.1 acres of wetlands (Wet Meadow, Emergent Marsh, and Shrub Wetland) during construction in Heber Valley. About 2.1 acres of Riparian Woodland would be converted to an upland type in the upper Strawberry River basin. About 3.4 acres of Emergent Marsh and 2.6 acres of Shrub Wetland would be created, and 36.8 acres of Wet Meadow and 33.6 acres of Shrub Wetland would be enhanced in the upper Strawberry River basin.

The No Action Alternative would not result in any impact on wetlands. The current baseline trend in wetland changes would continue.

1.5.4 Aquatic Resources

The Proposed Action would have the following impacts. A major mitigation requirement for the Strawberry Aqueduct and Collection System would be accomplished. Trout biomass in the upper Strawberry River basin would be increased by about 16,618 pounds, or 914 percent. Reduction of flows in Daniels Creek would result in a loss of 713 pounds of native trout biomass. However, a recreational fishery would be maintained in Daniels Creek by stocking fish at baseline levels. This stocking may have to occur earlier in the season during dry years. Supplemental flows would increase trout populations in Rock Ditch, Spring Creek, lower Lake Creek, London Ditch and Creamery Ditch by about 1,616 pounds, or 221 percent. However, this increase in trout populations would be detrimental to leatherside chub. A survey would be conducted prior to construction to identify leatherside chub population centers in Heber Valley and to learn more about the status of this species.

The DRP With Pipeline and DRP With Canal alternatives would have the following impacts. A major mitigation requirement for the Strawberry Aqueduct and Collection System would be accomplished. Trout biomass in the upper Strawberry River basin would be increased by about 16,618 pounds, or 914 percent. Reduction of flows in Daniels Creek would result in a loss of 713 pounds of native trout biomass. However, a recreational fishery would be maintained in Daniels Creek by stocking fish at baseline levels. This stocking may have to occur earlier in the season during dry years.

The No Action Alternative would not have any impacts on current trout populations in Heber Valley or in the upper Strawberry River basin. Current baseline trends would continue.

1.5.5 Wildlife Resources

The Proposed Action would have the following impacts. Construction would cause minor and temporary impacts on wildlife habitat in Heber Valley. Overall, the Proposed Action would not result in any significant impacts on game species and their habitat. The 20.7 acres of Wet Meadow habitat in Heber Valley that would be converted to an upland habitat provides limited, low value wildlife habitat. The conversion of this habitat does not exceed any of the significance criteria. Eliminating the transbasin diversion would potentially create or enhance about 76.4 acres of riparian vegetation and wildlife habitat (same acreage as discussed in Section 1.5.3 Wetlands) in the upper Strawberry River basin.

The DRP With Pipeline and DRP With Canal alternatives would have the following impacts. Construction would cause minor and temporary impacts on wildlife habitat in Heber Valley. Eliminating the transbasin diversion would potentially create or enhance about 76.4 acres of riparian vegetation and wildlife habitat (same acreage as discussed in Section 1.5.3 Wetlands) in the upper Strawberry River basin.

The No Action Alternative would not result in any impacts on wildlife habitat. Current baseline trends would continue.

1.5.6 Threatened and Endangered Species

The Proposed Action would have the following impacts. Approximately 20.7 acres of wetlands (in Heber Valley) of marginal Ute ladies'-tresses (a threatened plant species) habitat would be indirectly impacted. This marginal habitat is not important to recovery of the species in Heber Valley. Approximately 19.5 acres of Peregrine falcon prey habitat would be improved. Approximately 2.1 acres of Bald eagle habitat would be degraded, however the eagles would be benefited by increased trout populations in Heber Valley streams and the upper Strawberry River basin.

The DRP With Pipeline and DRP With Canal alternatives would have the following impacts. Approximately 6.9 acres of wetlands (in Heber Valley) of marginal Ute ladies'-tresses (a threatened plant species) habitat would be indirectly impacted. This habitat is not important to recovery of the species in Heber Valley. Approximately 40.2 acres of Peregrine falcon prey habitat would be improved. Approximately 2.1 acres of Bald eagle habitat would be degraded, however the eagles would benefit from the increased trout populations in the upper Strawberry River basin.

The No Action Alternative would not impact any threatened and endangered species.

1.5.7 Agriculture

The Proposed Action would have the following impacts. Approximately 245 animal unit months (AUMs) of pasture and 51 AUMs of grazing land would be lost during construction. Five hundred and forty seven tons of alfalfa and 1,960 bushels of barley production would be lost during construction. The loss would be approximately 2.5 percent of the total annual baseline production in the impact area of influence. Irrigation efficiencies would be improved after construction of the Proposed Action and implementation of the on-farm improvements under the Tri-Valley Watershed Plan. These improvements would result in a 2,001 annual increase in pasture AUMs (20 percent per year increase over baseline), and a 2,011 ton annual increase (9 percent per year increase over baseline) in alfalfa yields. Barley production after construction would essentially remain the same as under baseline conditions.

The DRP With Pipeline Alternative would result in the following impacts. Approximately 99 AUMs of pasture and 15 AUMs of grazing land would be lost during construction. One hundred and ninety nine tons of alfalfa and 710 bushels of barley production would be lost during construction. These losses would be approximately one percent of the total annual baseline production in the impact area of influence. No change from baseline conditions would occur after construction.

The DRP With Canal Alternative would result in the following impacts. Approximately 50 AUMs of pasture and 4 AUMs of grazing land would be lost during construction. One hundred and twenty six tons of alfalfa and 390 bushels of barley production would be lost during construction. These losses would be approximately 1/2 percent of the total annual baseline production in the impact area of influence. An annual loss of 271 tons of alfalfa, or 1.2 percent would occur after construction.

The No Action Alternative would not cause any changes in baseline production of AUMs, alfalfa or barley production.

1.5.8 Socioeconomics

The Proposed Action would have the following impacts. Construction would increase gross revenue, income and employment in the construction and retail trade sectors of the local economy. A total decrease of about $43,751 (2.5 percent) in agricultural gross revenue would occur during construction. Total gross peak annual revenue in Wasatch County would increase by an estimated $649,000 during construction. Irrigation efficiency improvements combined with the on-farm improvements accomplished under the Tri-Valley Watershed Plan would increase farm revenue, income and profitability after construction as total gross revenue increases by about $130,885 a year (7.5 percent). Revenue and income in Heber Valley's retail trade sector would increase as recreationists spend money in the valley on their way to the upper Strawberry River basin. The total increase in gross revenue in Wasatch County after construction would be about $316,000 a year (less than 1 percent of total Wasatch County revenue).

The DRP With Pipeline Alternative would have the following impacts. Agricultural gross revenue would be reduced by about $15,972 (less than 1 percent) during construction. Total gross peak annual revenue in Wasatch County would increase by an estimated $365,000 during construction. Gross agricultural revenue would decrease about $1,178 a year after construction (less than 1 percent). However, because of increased recreational use and expenditures the total gross revenue in Wasatch County after construction would increase about $118,000 a year (less than 1 percent of total Wasatch County revenue).

The DRP With Canal Alternative would have the following impacts. Agricultural gross revenue would be reduced by about $9,797 (less than 1 percent). Total gross peak annual revenue in Wasatch County would increase by an estimated $152,000 during construction. Gross agricultural revenue would decrease by about $17,117 a year (1 percent) after construction. However, because of increased recreational use and expenditures the total gross revenue in Wasatch County after construction would increase about $102,000 a year (less than 1 percent of total Wasatch County revenue).

The No Action Alternative would not affect baseline socioeconomic resources and trends in Wasatch County.

1.5.9 Recreation Resources

The Proposed Action would have the following impacts. The restoration of natural stream flows in the upper Strawberry River basin would make possible the replacement of 10,000 angler days per year to help mitigate losses attributed to the Strawberry Aqueduct and Collection System. Restoration of historic flows in the upper Strawberry River and its tributaries would substantially reduce the need to stock fish in the Strawberry Reservoir. Therefore, that hatchery production previously stocked in Strawberry Reservoir would be reallocated to other waters, resulting in an increase of 201,946 angler days outside of the Strawberry Valley. Analyzed benefits to Strawberry Reservoir water released to the Strawberry River or other Uinta basin streams affected by the Strawberry Aqueduct and Collection System would supplement current instream flows and create 1,913 additional angler days.

The preservation of baseline trout stocking levels would help avoid reduced recreation levels along Daniels Creek. Some minor increase in recreation would occur along the five Heber Valley streams that receive supplemental flows. Fishermen wishing to fish these streams would need to receive permission from landowners since public access is not provided.

The DRP With Pipeline and DRP With Canal alternatives would have the following impacts. The restoration of natural stream flows in the upper Strawberry River basin would make possible the replacement of 10,000 angler days per year to help mitigate losses attributed to the Strawberry Aqueduct and Collection System. Restoration of historic flows in the upper Strawberry River and its tributaries would substantially reduce the need to stock fish in the Strawberry Reservoir. Therefore, that hatchery production previously stocked in Strawberry Reservoir would be reallocated to other waters, resulting in an increase of 201,946 angler days outside of the Strawberry Valley. Analyzed benefits to Strawberry Reservoir water released to the Strawberry River or other Uinta basin streams affected by the Strawberry Aqueduct and Collection System would supplement current instream flows and create 1,913 additional angler days.

The No Action Alternative would not change baseline recreational opportunities or use trends.

1.6 Issues to be Resolved

1.6.1 The Daniel Replacement Water Contract

The Proposed Action and DRP alternatives cannot be implemented unless a contract between DIC and CUWCD is finalized that would define the terms and conditions by which replacement water is delivered to DIC once the transbasin diversion is terminated. The Water Resources analysis was conducted using assumptions that address the most likely terms and conditions in such a contract. Although the final terms and conditions will likely be the same as or very similar to the assumptions used in the analysis, the final outcome of ongoing negotiations is uncertain.

1.6.2 Non-Federal Cost-Sharing

Section 204 of CUPCA requires that the "non-Federal share of the cost of design, engineering, and construction of the Central Utah Project features authorized by Sections 202 and 203 shall be 35 percent of the total reimbursable costs." The Proposed Action is one of the projects authorized in Section 202 and 207. The cost sharing requirements associated with 202 and 207 would be met.

1.7 Consultation and Coordination

The CUWCD conducted extensive consultation and coordination while preparing this EIS and performing related environmental and planning studies. Pre-scoping and scoping consultations were held with the public, agencies and organizations. Less formal consultations with agencies, organizations and technical experts took place throughout the environmental analysis and preparation of the EIS.

The EIS scoping process included consultations with 29 agencies and organizations as well as 260 members of the general public. The concerns voiced by people at district workshops were incorporated into the Preliminary Planning Report in February 1993. Additional comments received at scoping meetings in February of 1993 and in March of 1994, and others received in writing after the meetings were analyzed and used to finalize the alternatives and scope of the EIS. A Scoping Summary Report (CUWCD 1995) released in May 1995 identified the following resource topics as the most important to the public, agencies and organizations that participated in scoping: agriculture, surface water, socioeconomics, wildlife resources, aquatic resources, wetlands and recreation. Resource topics identified as moderately important included threatened and endangered species, water quality, groundwater and health and safety.

Additional consultation and coordination occurred during the preparation of the EIS, and early planning studies. The following committees provided valuable input and helped reach important decisions:

- Provo/Wasatch Planning Coordination Committee (composed of 18 agencies and organizations)
- Wasatch County Water Efficiency Study Advisory Committee (composed of 14 agencies and organizations)
- Irrigation Water Delivery Requirements Technical Committee (composed of 6 agencies and organizations)
- Groundwater and Return Flow Technical Committee (composed of 9 agencies and organizations)
- Fishery Technical Committee (composed of 16 agencies and organizations)
- Instream Flow Work Group (composed of 8 agencies and organizations)

- Wetlands Technical Committee (composed of 19 agencies and organizations)
- Water Quality Technical Committee (composed of 9 agencies and organizations)

The district also worked with the agencies and organizations to incorporate results of related studies, including the NRCS Tri-Valley Watershed Management Plan and the U.S. Forest Service plan for abandoning and removing the DIC irrigation facilities.

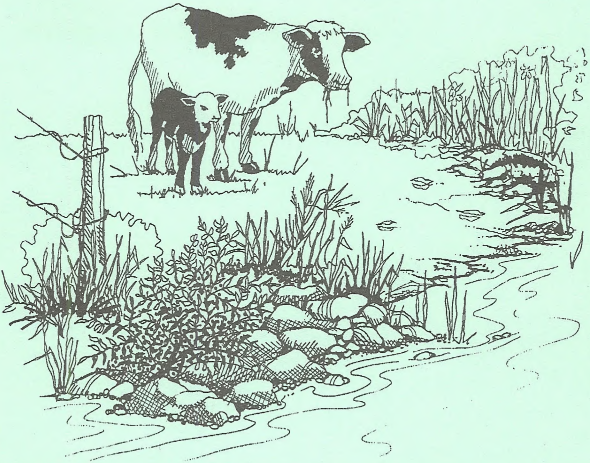
Draft work plans prepared for each resource topic addressed in the EIS were reviewed by 11 agencies and organizations and their comments incorporated into final work plans distributed in July and August 1994.

Chapter 1 of the Preliminary Draft Environmental Impact Statement was distributed to 14 agencies and organizations in July 1995 for early review and comment so they and their representatives would better understand the Proposed Action and alternatives as they reviewed the EIS technical reports.

Preliminary Draft EIS technical reports were distributed to 11 agencies and organizations for comments, and meetings were held to receive verbal comments. These meetings were held in October, November and December 1995, and additional comments were received in writing after the meetings.

The Preliminary Draft EIS was distributed to cooperating agencies for review and comment on March 1, 1996. Written comments were received through March 27, 1996 and changes were incorporated as part of preparing the DEIS.

The DEIS was distributed to the public and agencies on June 19, 1996, with a 60-day comment period ending August 13, 1996. Public hearings were held in Heber City on July 16, 1996 and in Salt Lake City on July 17, 1996. Thirty comment letters were received on the WCWEP and DRP EIS.



Wasatch County Water Efficiency Project and Daniel Replacement Project

Final Environmental Impact Statement

Section 2
Comparative Analysis of Impacts of the Proposed Action and Alternatives

Section 2
Comparative Analysis of Impacts of the Proposed Action and Alternatives

2.1 Introduction

This section presents in summary fashion the impacts of the Proposed Action (Wasatch County Water Efficiency Project With Daniel Replacement Pipeline), Daniel Replacement Project (DRP) With Pipeline Alternative, DRP With Canal Alternative, and the No Action Alternative. The impacts considered in this section are impacts after mitigation. Additional information regarding the impacts of the Proposed Action and alternatives is provided in Chapter 3 of the Draft Environmental Impact Statement (DEIS). Section 2.2 describes the consequences of the No Action Alternative, and Section 2.3 compares the impacts of the Proposed Action with the DRP alternatives by resource topic. The impacts described in this section are those that would occur on baseline conditions. Baseline conditions are presented in each resource section of Chapter 3 in the DEIS.

2.2 The No Action Alternative

The No Action Alternative would lead to a continuation of the baseline conditions defined in each Affected Environment section of Chapter 3 in the DEIS. The No Action Alternative would result in the following consequences:

- Daniel Irrigation Company (DIC) diversions from the upper Strawberry River basin and Daniels Creek would continue
- Five Heber Valley streams would not receive the target supplemental instream flows included in the Proposed Action
- Pressurized water that would be provided by the Proposed Action and used to help convert Heber Valley flood irrigation systems to sprinkler systems would not be available
- Pumping facilities that would be provided by the Proposed Action for a secondary irrigation water system in Heber City would not be available
- The No Action Alternative does not include the commitment to implement the aquatic mitigation measure of restoring the historic stream flows in the upper Strawberry River basin that would be accomplished by terminating the DIC transbasin diversions and implementation of the Strawberry Exchange. Therefore, if the No Action Alternative is selected, the Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission) would still have an obligation to implement the Strawberry Exchange in some fashion or to seek relief from this commitment.

2.3 Comparison of Impacts

Table 2–1 documents the quantified impacts of the Proposed Action and each alternative (with the exception of the No Action Alternative). Sections 2.3.1 through 2.3.17 discuss the impacts in Table 2-1 and those that were not quantified.

Table 2-1
Summary of Proposed Action and DRP Alternatives Impacts

Page 1 of 5

Resource Topics	**Proposed Action (WCWEP With Daniel Replacement Pipeline)**	**Daniel Replacement Project With Pipeline Alternative**	**Daniel Replacement Project With Canal Alternative**
Water Resources			
• Avg. Change in Inflow to Strawberry Res. (ac-ft/year)	+2,900 (+2%)	Same as the Proposed Action	Same as the Proposed Action
• Avg. Change in Monthly Jordanelle Res. Storage (ac-ft)	0	0	0
• Avg. Change in Daniels Creek Flow Above and During DIC Diversions (ac-ft/year)	-2,900 (-35%)	Same as the Proposed Action	Same as the Proposed Action
• Range of Avg. Monthly Flow Changes in 5 Heber Valley Streams Receiving Supplemental Flows (cfs)	+0.5 to +16.9	0	0
• Avg. Monthly Change in Total Heber Valley Inflow to Deer Creek Res. (cfs)	0	-1 (0%)	-1 (0%)
• Avg. Monthly Change in Deer Creek Res. Storage (ac-ft)	+100 (+0.1%)	+100 (+0.1%)	+100 (+0.1%)
• Avg. Monthly Change in Lower Provo River Flow at Provo City Gage (cfs)	0	-3 (-3%)	-3 (-3%)
• Change in Heber Valley Groundwater Levels (feet)	-40 to -60 in southeast portion of Heber Valley -1 to -40 in northern, central and southern portions of Heber Valley	-1 to -2 in northern portion of Heber Valley -1 to -5 in eastern and southern portions of Heber Valley	-1 to -2 in northern portion of Heber Valley -1 to -5 in eastern and southern portions of Heber Valley

Table 2-1
Summary of Proposed Action and DRP Alternatives Impacts

Page 2 of 5

Resource Topics	Proposed Action (WCWEP With Daniel Replacement Pipeline)	Daniel Replacement Project With Pipeline Alternative	Daniel Replacement Project With Canal Alternative
Water Quality			
• NO_3 Concentrations in Heber Valley Groundwater (mg/L)	Avg. Yrs: 0 Wet Yrs: +0.1 (+9%) Dry Yrs: 0	Avg. Yrs: -0.1 to -0.2 (-9 to -10%) Wet Yrs: 0 Dry Yrs: 0	Avg. Yrs: -0.1 to -0.2 (-9 to -10%) Wet Yrs: 0 Dry Yrs: 0
• TSS Concentrations in Provo River Inflow to Deer Creek Res. (mg/L)	Avg. Yrs: 0 Wet Yrs: -0.5 (-5%) Dry Yrs: 0	Avg. Yrs: -1.2 (-11%) Wet Yrs: 0 Dry Yrs: 0	Avg. Yrs: -1.2 (-11%) Wet Yrs: 0 Dry Yrs: 0
• TP Concentrations in Provo River Inflow to Deer Creek Res. (mg/L)	Avg. Yrs: 0 Wet Yrs: -0.002 (-6%) Dry Yrs: 0	Avg. Yrs: -0.004 (-11%) Wet Yrs: 0 Dry Yrs: 0	Avg. Yrs: -0.004 (-11%) Wet Yrs: 0 Dry Yrs: 0
• NO_3 Concentrations in Provo River Inflow to Deer Creek Res. (mg/L)	Avg. Yrs: 0 Wet Yrs: -0.01 (-6%) Dry Yrs: 0	Avg. Yrs: -0.02 (-12%) Wet Yrs: 0 Dry Yrs: 0	Avg. Yrs: -0.02 (-12%) Wet Yrs: 0 Dry Yrs: 0
• TSS Loads to Deer Creek Res. (kg/yr)	Avg. Yrs: -23,500 (-0.6%) Wet Yrs: 0 Dry Yrs: +65,740 (+2.0%)	Avg. Yrs: +4,400 (+0.1%) Wet Yrs: 0 Dry Yrs: +14,730 (+0.5%)	Avg. Yrs: +4,400 (+0.1%) Wet Yrs: 0 Dry Yrs: +14,730 (+0.5%)
Wetlands			
• Wet Meadow loss in Heber Valley (acres)	20.7	0	0
• Riparian Woodland loss in upper Strawberry River basin (acres)	2.1	2.1	2.1

Table 2-1
Summary of Proposed Action and DRP Alternatives Impacts

Page 3 of 5

Resource Topics	Proposed Action (WCWEP With Daniel Replacement Pipeline)	Daniel Replacement Project With Pipeline Alternative	Daniel Replacement Project With Canal Alternative
Wetlands (cont.)			
• Emergent Marsh created in upper Strawberry River basin (acres)	3.4	3.4	3.4
• Shrub Wetland created in upper Strawberry River basin (acres)	2.6	2.6	2.6
• Wet Meadow enhanced quality and functions in upper Strawberry River basin (acres)	36.8	36.8	36.8
• Shrub Wetland enhanced quality and functions in upper Strawberry River basin (acres)	33.6	33.6	33.6
Aquatic Resources			
• Change in Pounds of Trout in 5 Heber Valley Streams Receiving Supplemental Flows	+1,616 (+221%)	0	0
• Change in Pounds of Trout in Upper Daniels Creek	Native Trout: -713 (-83%) Total Trout Population: 0	Same as Proposed Action	Same as Proposed Action
• Change in Pounds of Trout in Upper Strawberry River Basin	+16,618 (+914%)	Same as Proposed Action	Same as Proposed Action
Wildlife Resources			
• Net Change in Acres of Wetland Wildlife Habitat	+53.6	+74.3	+74.3
Mineral & Energy Resources			
• Energy Used During Operation (kwhr/yr)	Net increase of 1,890,000	Increase of 832,000	Increase of 802,000

Table 2-1
Summary of Proposed Action and DRP Alternatives Impacts

Page 4 of 5

Resource Topics	Proposed Action (WCWEP With Daniel Replacement Pipeline)	Daniel Replacement Project With Pipeline Alternative	Daniel Replacement Project With Canal Alternative
Air Quality • Max. Vehicle Emissions During Any 12 Month Period of Construction (tons)	Nitrogen oxides: 150 Sulfur oxides: 13 Particulates: 11	Nitrogen oxides: 50 Sulfur oxides: 4 Particulates: 3	Nitrogen oxides: 57 Sulfur oxides: 5 Particulates: 4
Agriculture • Production Loss During Construction	-296 AUMs* of grazing/pasture -547 tons of alfalfa -1,960 bushels of barley	-114 AUM of grazing/pasture -199 tons of alfalfa -710 bushels of barley	-54 AUM of grazing/pasture -126 tons of alfalfa -390 bushels of barley
• Annual Change in Production After Construction	+2,001 AUMs of grazing/pasture (+20%) +2,011 tons of alfalfa (+9%) -120 bushels of barley (-0.2%)	-156 AUM of grazing/pasture (-1.6%) -1 ton of alfalfa (-0.0%) no change from baseline (barley)	-156 AUMs of grazing/pasture (-1.6%) -271 tons of alfalfa (-1.2%) no change from baseline (barley)
Socioeconomics • Change in Gross Agricultural Revenue During Construction (total $)	-$43,751 (-2.5%)	-$15,972 (<-1.0%)	-$9,797 (<-1.0%)
• Change in Total Gross Revenue in Wasatch County During Construction (peak annual $)	+$649,000 (<1.0%)	+$365,000 (<1.0%)	+$152,000 (<1.0%)
• Temporary Employment Impacts During Construction (total jobs)	+83	+48	+58
• Change in Gross Agricultural Revenue After Construction ($ per/yr)	+$130,885 (+7.5%)	-$1,178 (<-1.0%)	-$17,117 (-1.0%)

Table 2-1
Summary of Proposed Action and DRP Alternatives Impacts

Page 5 of 5

Resource Topics	Proposed Action (WCWEP With Daniel Replacement Pipeline)	Daniel Replacement Project With Pipeline Alternative	Daniel Replacement Project With Canal Alternative
Socioeconomics (cont.)			
• Change in Total Gross Revenue in Wasatch County After Construction ($ per/yr)	+$316,000 (<1.0%)	+$118,000 (<1.0%)	+$102,000 (<1.0%)
Recreation			
• Change in Recreation Use (angler days/yr)	+10,000 in upper Strawberry River basin	Same as Proposed Action	Same as Proposed Action
Transportation			
• Peak Increase in Traffic During Construction (daily trips)	154 on Hwy. 189 (+2.5%) 310 on Hwy. 40 (+2.9%)	98 on Hwy. 189 (+1.6%) 172 on Hwy. 40 (+1.6%)	98 on Hwy. 189 (+1.6%) 180 on Hwy. 40 (+1.7%)
• Pipeline Road Crossings	60	12	4

Note:

Impacts in this table are defined by comparing conditions with the Proposed Action and DRP alternatives to baseline conditions (the same way impacts are defined in Chapter 3 of the DEIS). Percent change is the change from baseline conditions.

TSS = Total Suspended Solids; NO_3 = Nitrates; and TP = Total Phosphorus

*AUM is animal unit month, the amount of forage (800 pounds dry matter) required to feed one cow and calf for one month.

2.3.1 Water Resources

The Proposed Action and DRP alternatives would terminate transbasin diversions from the upper Strawberry River basin to Heber Valley and the Provo River basin. This would increase flows in the Strawberry River and its tributaries and decrease flows in Daniels Creek. Unlike the DRP alternatives, the Proposed Action would change water use applications and efficiencies by facilitating the conversion from flood irrigation systems to sprinkler systems by Heber Valley farmers. The increase in water use efficiency and related reduction in diversion requirements would prevent irrigation water shortages in Heber Valley. On the other hand, both DRP alternatives would increase shortages of agricultural water supplies in Heber Valley for all irrigation companies except DIC because there would be less CUP agricultural water available for contracting. The Proposed Action and DRP alternatives would not impact the supplies of water users downstream of Deer Creek Reservoir.

Only the Proposed Action would increase flows in London, Rock and Creamery ditches, Spring Creek and lower Lake Creek. The irrigation conversions facilitated by the Proposed Action would improve the efficiency of water use in Heber Valley and reduce groundwater recharge, storage levels and discharge in Heber Valley. Much smaller reductions in groundwater levels would occur under the DRP alternatives. In spite of the reduction in irrigation diversions, reservoir operational requirements would reduce the average storage in Jordanelle Reservoir. Only the DRP alternatives would cause an average monthly reduction in total Heber Valley inflow to Deer Creek Reservoir and in lower Provo River flows below Deer Creek Reservoir, unless corrective measures, which are part of the design of the alternatives, are implemented. The Proposed Action would reduce groundwater levels in Heber Valley from approximately 2 feet west of Heber City to 60 feet in the Timpanogos Irrigation Company area. The DRP alternatives would not cause a significant change in groundwater levels.

2.3.2 Water Quality

The Proposed Action would not change nitrate (NO_3) concentrations in Heber Valley groundwater during average and dry years, and would increase concentrations during wet years. The DRP alternatives would slightly reduce groundwater NO_3 concentrations during average years. The DRP alternatives would reduce NO_3, total suspended solids (TSS) and total phosphorus (TP) concentrations in Provo River inflow to Deer Creek Reservoir about twice as much as the Proposed Action. The Proposed Action would decrease TSS, and NO_3 concentrations in Spring Creek, Lake Creek, London Ditch, and Creamery Ditch. The DRP alternatives would not affect these creeks and ditches. TSS loads to Deer Creek Reservoir would essentially not change during average years under the Proposed Action and the DRP alternatives. During wet years the Proposed Action decreases TSS loads, while the DRP alternatives do not change such loads. During dry years TSS loads increase slightly under the Proposed Action but decrease slightly under the DRP alternatives. Deer Creek Reservoir eutrophication and its mixing status would not be affected by the Proposed Action or DRP alternatives.

2.3.3 Wetlands

The Proposed Action and DRP alternatives would enhance and create wetlands in the upper Strawberry River basin by the same amount and in the same locations. Wet meadow and shrub wetlands would be enhanced and emergent marsh and shrub wetlands would be created. A small amount of riparian woodland wetlands in the upper Strawberry River basin would be lost under the Proposed Action and DRP alternatives. Only the Proposed Action would cause significant and adverse impacts on low function and value wet meadow wetlands (pasture and hay fields) in Heber Valley. These indirect impacts would be caused by a drawdown in groundwater elevations and would not be mitigated.

2.3.4 Aquatic Resources

The Proposed Action and DRP alternatives would greatly enhance aquatic resources habitat and trout populations in the upper Strawberry River basin. Only the Proposed Action would cause a major increase in aquatic resources habitat and trout populations in the following Heber Valley streams: London, Rock and Creamery ditches, Spring Creek and lower Lake Creek. The enhancement of trout habitat in these creeks and ditches may cause adverse and significant impacts on non-game species, including the leatherside chub. The leatherside chub is a sensitive species in Utah and mitigation is proposed under the Proposed Action to minimize and avoid adverse impacts on this species.

The Proposed Action and DRP alternatives would cause the same adverse impacts on natural trout production and some non-game species in Daniels Creek. Only the trout production impacts of the Proposed Action and DRP alternatives in Daniels Creek would be significant. Mitigation would be required for the Proposed Action and DRP alternatives. The Central Utah Water Conservancy District (CUWCD) and Mitigation Commission would investigate mitigation opportunities within the Provo River drainage with assistance from the Utah Division of Wildlife Resources and U.S. Fish and Wildlife Service (FWS).

2.3.5 Wildlife Resources

The Proposed Action and DRP alternatives would cause an overall net increase in wildlife habitat (comprised of non-riparian wetlands), primarily in the upper Strawberry River basin. The Proposed Action would cause a smaller increase than the DRP alternatives, primarily because of the wetland impacts described in Section 2.3.3. It also would permanently remove a small amount of wildlife habitat where a facility right-of-way (ROW) would be located.

2.3.6 Threatened and Endangered Species

Spotted frogs have not been documented in wet meadows that would be affected by the Proposed Action. However, suitability of habitat has not been evaluated and recent surveys have not been conducted in the area that would be indirectly impacted by the 2-foot groundwater elevation drawdown. Impacts are not expected to occur because the potential impact areas are used for livestock grazing and hay production, which are uses not considered compatible with maintaining spotted frog habitat. Therefore, the Proposed Action is not expected to have a direct or indirect effect on spotted frogs or their habitat. However, the FWS and Utah Division of Wildlife Resources feel there is a potential for indirect impact on spotted frog habitat. Ute ladies'-tresses would not be directly impacted by the Proposed Action and DRP alternatives. The wetlands habitat that would be indirectly impacted by the Proposed Action is marginal Ute ladies'-tresses habitat that is not considered important to the orchid survival. The same wetland habitat also is habitat for the prey of peregrine falcons. The Proposed Action and DRP alternatives would not adversely affect the June sucker in the lower Provo River. Bald eagles would benefit from increased trout populations.

2.3.7 Soil Resources

The Proposed Action and DRP alternatives would cause a major reduction in soil erosion at the McGuire and Bjorkman headcuts in the upper Strawberry River basin. Adverse soil impacts in Heber Valley would be minor.

2.3.8 Mineral and Energy Resources

Construction of the Proposed Action and DRP alternatives would require the extraction of gravel from a Heber Valley quarry, which would use energy. The Proposed Action would use the most mineral resources and energy, and the DRP With Canal Alternative would use the least.

2.3.9 Air Quality

Vehicle emissions during construction of the Proposed Action would be greater than those associated with the DRP alternatives, but none would exceed applicable air quality standards. The Proposed Action and DRP alternatives would cause an increase in vehicle emissions after construction as recreation traffic increases.

2.3.10 Agriculture

The Proposed Action and DRP alternatives would cause temporary and permanent impacts on grazing and cropland production in Heber Valley. The production loss during construction would be higher under the Proposed Action than under the DRP alternatives. After construction, the Proposed Action would cause an increase in production while the DRP alternatives would cause a decrease in production.

2.3.11 Socioeconomics

Construction of the Proposed Action and alternatives would increase gross revenue, income and employment in the construction and retail trade sectors of the local economy. The Proposed Action would cause the most positive impacts during construction. Temporary and permanent disturbances to grazing land and cropland would cause a loss of revenue and income in the agricultural sector under the Proposed Action and DRP alternatives. Only the Proposed Action would increase farm revenue, income and profitability after construction. Both DRP alternatives would cause a minor decrease in farm revenue, income and profitability. The increase in recreation caused by the Proposed Action and alternatives would increase revenue and income in Heber Valley's retail trade sector.

2.3.12 Health and Safety

The Proposed Action and DRP alternatives would cause a minor increase in potential safety hazards for construction workers and other drivers because of a slight increase in the risk of traffic accidents. The accidental failure of DRP facilities during a major earthquake, or some other unexpected event, would cause some property damage but such an event is very unlikely.

2.3.13 Noise

The Proposed Action and DRP alternatives would cause adverse noise impacts during construction and from recreation traffic after construction. Some of the noise impacts during construction would be significant for people who walk, drive or reside within 50 feet of construction.

2.3.14 Visual Resources

The Proposed Action would cause more adverse visual impacts than the DRP alternatives because it would include more power poles and construction activities would be spread over a greater area. However, none of these impacts would be significant.

2.3.15 Recreation Resources

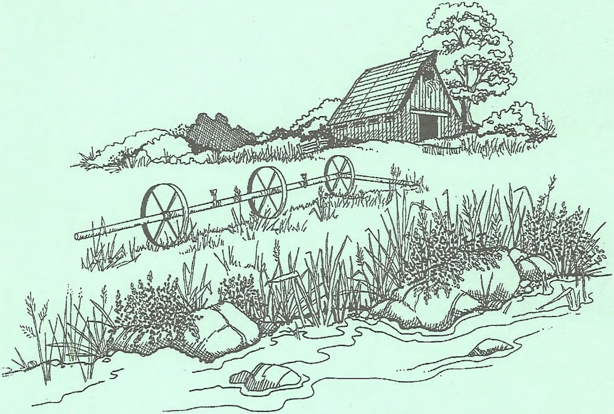
The Proposed Action and DRP alternatives would restore streamflows and improve fishing in the upper Strawberry River and its tributaries. This would attract additional recreationists to the basin. Only the Proposed Action would cause a minor increase in recreation along the five Heber Valley streams receiving supplemental flows. This minor increase would be dependent upon anglers requesting and receiving permission to trespass for angling purposes, because public access would not be assured as part of the Proposed Action. The continuation of baseline trout stocking levels in Daniels Creek under the Proposed Action and DRP alternatives would prevent adverse recreation impacts along the creek.

2.3.16 Cultural Resources

Abandonment and removal of the DIC diversion facilities in the upper Strawberry River basin under the Proposed Action and DRP alternatives would cause adverse and significant impacts on the historic integrity of this canal system, but mitigation is proposed. The Proposed Action and DRP alternatives have the potential to cause cultural resource impacts in Heber Valley, but the extent and location of impacts would not be known until complete inventories are conducted before construction.

2.3.17 Transportation

The increase in traffic and number of road crossings during construction of the Proposed Action would be greater than the same type of impacts during construction of the DRP alternatives. However, motorists would experience only minor delays. Traffic in the upper Strawberry River basin and Heber Valley would increase under the Proposed Action and DRP alternatives as recreationists drive to the restored streams in the upper Strawberry River basin.



Wasatch County Water Efficiency Project and Daniel Replacement Project

Final Environmental Impact Statement

Section 3
Consultation and Coordination

Section 3
Consultation and Coordination

3.1 Introduction

Chapter 4 in the Wasatch County Water Efficiency Project (WCWEP) and Daniel Replacement Project (DRP) Draft Environmental Impact Statement (Draft EIS or DEIS) described the consultation and coordination that was undertaken by the Central Utah Water Conservancy District (CUWCD) in preparing the DEIS up to the time it was released for public review. This section in the Final Environmental Impact Statement (Final EIS or FEIS) describes the results of the public review process. It should be noted that when the WCWEP and DRP DEIS was released, the same document also contained the Provo River Restoration Project (PRRP) DEIS. After completion of the public review process, the decision was made to prepare separate EISs.

This section is divided into four parts: Section 3.1 Introduction, Section 3.2 Clarification of Water Supply and Budget Information, Section 3.3 Comment Letters and Responses, and Section 3.4 Hearing Comments and Responses.

The DEIS (INT DES-96-26) was filed with the Environmental Protection Agency on June 10, 1996, and announced in the Federal Register on June 13, 1996 (Vol. 61, Number 115, page 30111). In addition, media releases were sent to 23 newspapers in Wasatch County, Salt Lake County, Utah County, and Uintah County, Utah. The releases announced the availability of the DEIS, briefly described the Proposed Action and requested public comments.

Approximately 500 copies of the DEIS were distributed by mail to various individuals, organizations, and government agencies (see Table 3-1). During the 60-day public comment period (June 10, 1996 to August 13, 1996) CUWCD conducted two formal public hearings to solicit public comments on the DEIS (see Table 3-2 for details). The public hearings covered both the WCWEP and DRP as well as the PRRP. The public hearing transcripts have not been reprinted because they are part of the public domain. However, copies of the hearing transcripts may be reviewed at the following offices: CUWCD, 355 West 1300 South, Orem, Utah, or the Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission), 111 E. Broadway, Suite 310, Salt Lake City.

In addition to the testimony received at the public hearings, CUWCD received a total of 30 letters addressing the WCWEP and DRP DEIS during the comment period.

3.2 Clarification of Water Supply and Budget Information

Many of the comments received on the Draft EIS requested clarification of how the Proposed Action would conserve water and avoid impacts on the supplies of water users downstream of Deer Creek Reservoir after the transbasin diversions from the Strawberry River basin are terminated. Water distribution diagrams showing the diversions and return flows of water in the Heber Valley under baseline conditions, the Proposed Action, and the DRP alternatives were included in the Draft Water Resources Technical Report. These water distribution diagrams have been modified and included in this section of the Final EIS to clarify the water resource changes that would be caused by the Proposed Action and DRP alternatives. The following sections describe the Daniel Replacement Project water supply and water distribution diagrams for the Proposed Action and DRP alternatives.

Table 3-1
Agencies and Other Government Entities Requested to Formally Review the Draft EIS

Federal Government Agencies	
Department of the Interior *Bureau of Reclamation *Fish and Wildlife Service[1] Bureau of Land Management *Geological Survey (USGS) National Park Service Bureau of Indian Affairs Bureau of Mines Central Utah Project Completion Act Office[2] Department of Agriculture *Forest Service[1] *Natural Resources Conservation Service[1] (NRCS)	Advisory Council on Historic Preservation Department of the Army *Army Corps of Engineers[1] *Department of Commerce *Department of Housing and Urban Development *Environmental Protection Agency[1] Department of Transportation Department of Energy *Department of Health & Human Services Utah Reclamation Mitigation and Conservation Commission[2]
State Government and Agencies	
*Utah Resource Development Coordinating Committee[3]	
Local Governments	
*Wasatch County Commission City of Woodland Heber City Orem City	Payson City *Provo City Sandy City Utah County Commission
U.S. Senators and Representatives	
Senator Orin Hatch Senator Robert Bennett	Representative Bill Orton Representative Jim Hansen Representative Enid Greene

Notes:
*Provided Comments
[1] Cooperating Agency
[2] Joint Lead Agency
[3] Detailed list of individual agencies may be obtained from Karen Ricks, Project Manager, CUWCD, 355 West, 1300 South, Orem Utah, 84058

Table 3-2
Draft EIS Public Hearings

Location	Date	No. of Attendees	No. of Speakers
Heber City	July 16, 1996	103	23[a]
Salt Lake City	July 17, 1996	33	8[b]

Notes:
[a] Only one person commented on the WCWEP and DRP DEIS
[b] Only three people commented on the WCWEP and DRP DEIS

3.2.1 Daniel Replacement Project Water Supply

Under the Proposed Action, the Wasatch County Special Service Area No. 1 (WCSSA) would continue to contract for 12,100 acre-feet of Central Utah Project (CUP) agricultural water. Implementation of the Proposed Action would result in more efficient use of water within the WCSSA service area, which would produce an average of 2,900 acre-feet of conserved (saved) CUP agricultural water annually. WCSSA would make this 2,900 acre-feet of conserved (saved) CUP water available to the CUWCD in Jordanelle Reservoir. WCSSA would reduce its call on CUP agricultural water to 9200 acre-feet. CUWCD would then provide this 2900 acre-feet to Daniel Irrigation Company (DIC) as a replacement supply. Because the replacement supply to DIC would be water conserved from the CUP water supply in Jordanelle Reservoir and would not be water that is presently part of the supply of water users downstream of Deer Creek Reservoir, a new water right appropriation or exchange application would not be required.

3.2.2 Water Distribution Diagrams

The following sections describe each of the modified water distribution diagrams. These diagrams represent the entire Heber Valley, not just the area served by the Proposed Action. All water volumes cited are average annual volumes.

3.2.2.1 Baseline Water Supply and Distribution

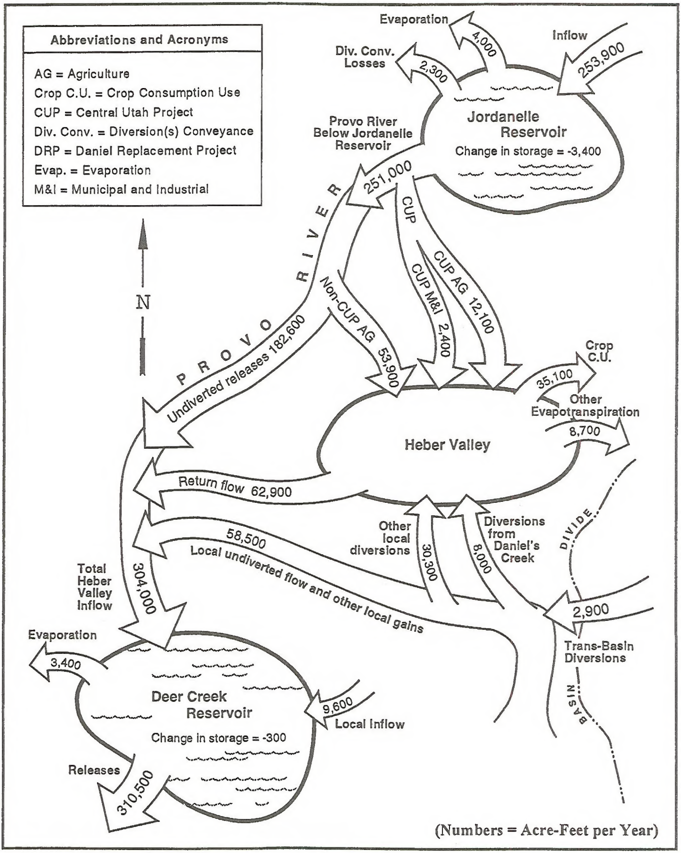
This section describes the information presented in Water Resources Technical Report Figure 4-7, which displays the estimated distribution of water in Heber Valley under baseline conditions. It is important to note that baseline conditions are different than existing conditions because baseline conditions include the delivery of CUP agricultural and municipal and industrial water to Heber Valley from Jordanelle Reservoir.

Under baseline conditions, approximately 53,900 acre-feet of non-CUP water would be diverted from the Provo River by water users in Heber Valley. An average of 12,100 acre-feet of CUP agricultural water and 2,400 acre-feet of CUP municipal and industrial (M&I) water from Jordanelle Reservoir storage would also be diverted from the Provo River. An average of 2,900 acre-feet would be diverted from the upper Strawberry River basin to Daniels Creek. Total diversions from other local tributaries (including Daniels Creek) would average approximately 38,300 acre-feet.

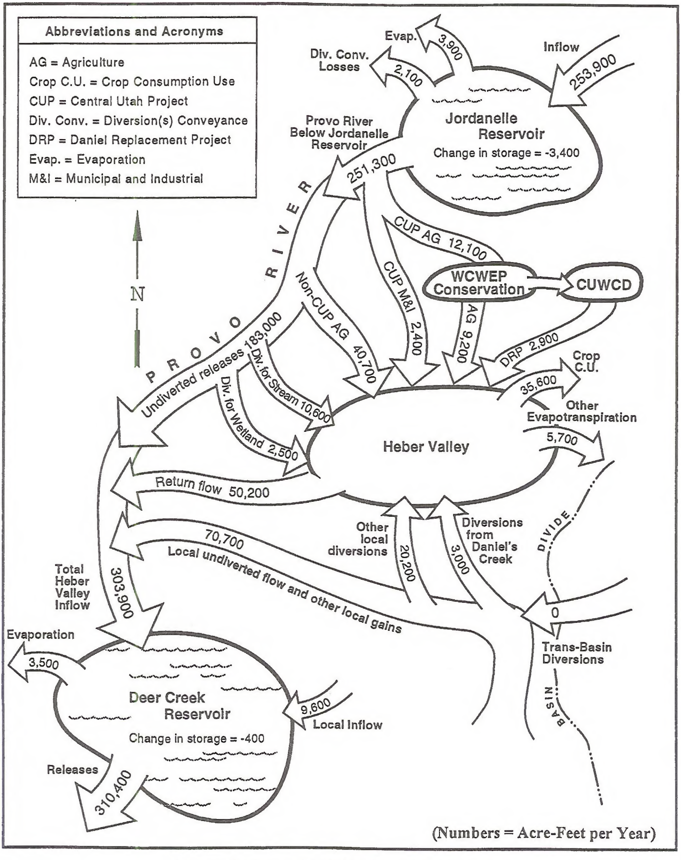
Water consumed by crops in Heber Valley would average approximately 35,100 acre-feet. An estimated 8,700 acre-feet would be lost as a result of consumption by vegetation on other lands indirectly irrigated, from runoff or subirrigation from shallow groundwater levels. Consumption of water also would occur as a result of evaporation of water seeping to the ground surface. This loss is approximately 12 percent of the amount of applied irrigation water that is not directly consumed by crops. Applied irrigation water, less crop consumption and other evapotranspiration, results in 62,900 acre-feet of return flow to the Provo River from irrigation activities in Heber Valley.

3.2.2.2 Water Supply and Distribution Under The Proposed Action

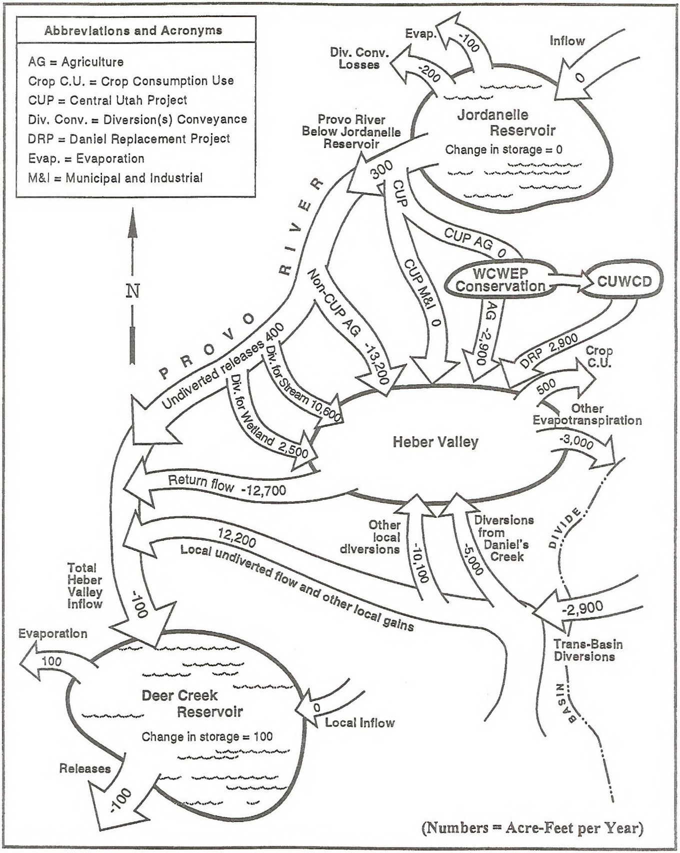
This section describes the information presented in Water Resources Technical Report Figure 4-8, which displays the estimated distribution of water in Heber Valley under the Proposed Action and Water Resources Technical Report Figure 4-9, which displays the changes in water distribution between the Proposed Action and baseline. Transbasin diversions from the upper Strawberry River basin to Daniels Creek would be reduced to zero, a reduction of 2,900 acre-feet. Diversions of non-CUP water from the Provo River, Daniels Creek and other local tributaries would be reduced because of the decrease in irrigation water demand resulting from irrigation efficiency improvements. The total CUP agricultural supply for Heber Valley would not change, however delivery of CUP water to irrigators in Heber Valley (except DIC) would decrease by 2,900 acre-feet. This reduction in CUP agricultural water deliveries would be offset by a corresponding increase of 2,900 acre-feet in water deliveries from Jordanelle Reservoir to DIC. As shown in the diagrams, the source of the DIC



Water Resources Technical Report Figure 4-7
Baseline Distribution of Water in Heber Valley



Water Resources Technical Report Figure 4-8
Proposed Action
Distribution of Water in Heber Valley



Water Resources Technical Report Figure 4-9
Change From Baseline To Proposed Action (WCWEP with DRP)
Distribution of Water in Heber Valley

replacement supply is water conserved by the Proposed Action from the CUP agricultural supply of Heber Valley.

Flows in local Heber Valley streams would increase as a result of reductions in local diversions and an increase in Provo River diversions to supplement the flows of five Heber Valley streams. Water consumed by crops would increase slightly under the Proposed Action. Water consumed through other evapotranspiration would be reduced by an average of approximately 3,000 acre-feet as a result of the reduction in agricultural runoff to adjacent lands, consumption of shallow groundwater by vegetation and direct evaporation of groundwater in seepage areas. This represents approximately 12 percent of the change in applied irrigation water that is not consumed by crops. Because the Proposed Action would reduce the amount of water diverted for irrigation in Heber Valley, it would reduce water losses in the valley. This reduction or savings of 3,000 acre-feet effectively offsets the loss of 2,900 acre-feet from the Provo River system associated with termination of the transbasin diversions from the Strawberry River drainage. This loss would be further offset by the return flows from the DIC replacement supply which would be applied to lands in the DIC service area.

3.2.2.3 Water Supply and Distribution Under The DRP With Pipeline Alternative

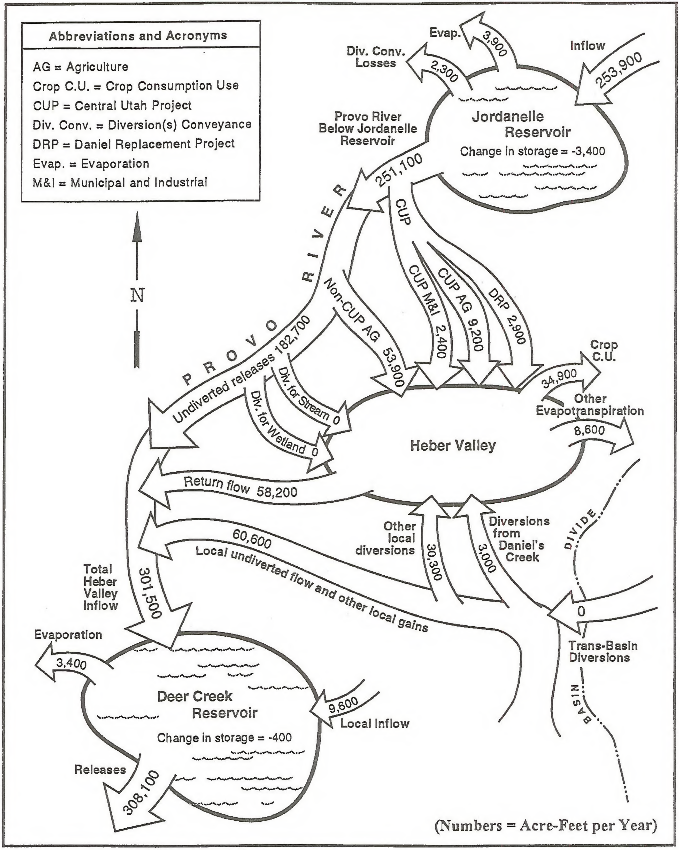
This section describes the information presented in Water Resources Technical Report Figure 4-10, which displays the estimated distribution of water in Heber Valley under the DRP With Pipeline Alternative and Water Resources Technical Report Figure 4-11, which displays the changes in water distribution between the DRP With Pipeline Alternative and baseline. Transbasin diversions from the Strawberry River basin to Daniels Creek would be terminated. The CUP agricultural supply to the Heber Valley (excluding DIC) would be reduced by 2,900 acre-feet. CUP agricultural water would be delivered to DIC as a replacement supply. Irrigation practices in Heber Valley would not change under this alternative, therefore no conservation would occur and no supplemental water would be delivered to local streams.

3.2.2.4 Water Supply and Distribution Under The DRP With Canal Alternative

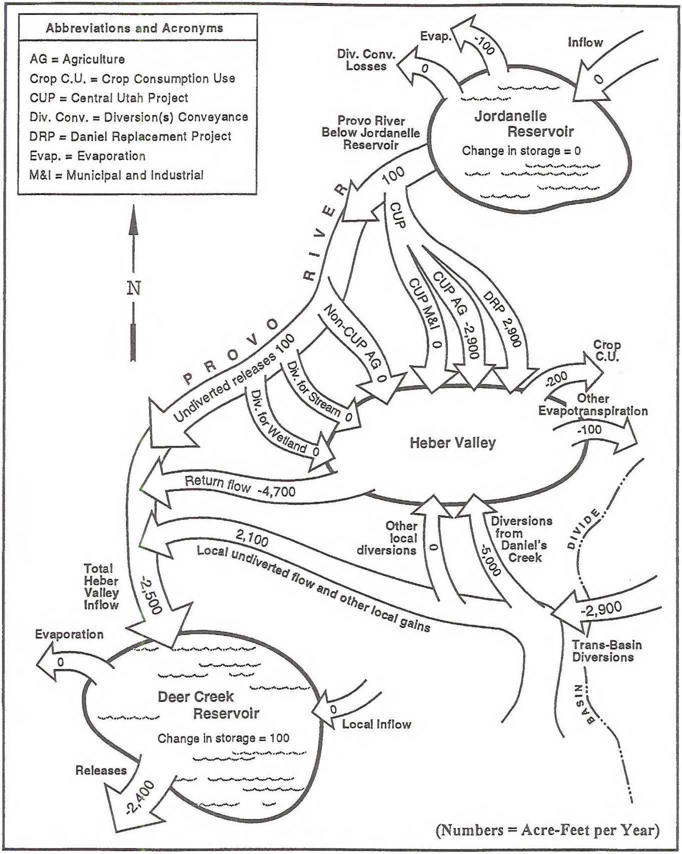
This section describes the information presented in Water Resources Technical Report Figure 4-12, which displays the estimated distribution of water in Heber Valley under the DRP With Canal Alternative and Water Resources Technical Report Figure 4-13, which displays the changes in water distribution between the DRP With Canal Alternative and baseline. The water supply conditions under this alternative would be the same as under the DRP With Pipeline Alternative, except the amount of DRP water diverted for delivery to DIC would increase from 2,900 acre-feet to 3,400 acre-feet and the remaining CUP agricultural supply to the Heber Valley would be reduced to approximately 8,700 acre-feet. The increase in DRP diversions would be required because approximately 500 acre-feet of DRP water would be lost to seepage in the enlarged Timpanogos Canal. Deliveries to DIC would be 2,900 acre-feet.

3.3 Comment Letters and Responses

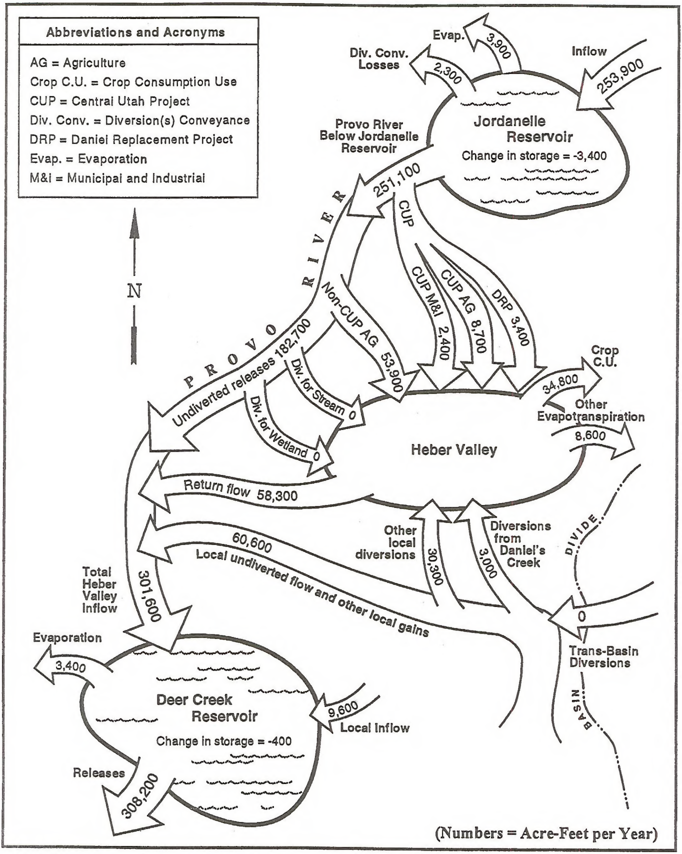
This section contains the comment letters and responses. As stated in Section 3.1, CUWCD received 30 letters addressing the WCWEP and DRP DEIS. Each letter was assigned a reference number (see Table 3-3) and reviewed. Responses were prepared for substantive comments (those that presented new data, raised new issues, or disagreed with the impact conclusions). When appropriate, DEIS sections were revised through an errata summary (see Section 4 of the FEIS). Those comments presenting only opinions were also recognized. All comment letters have been reprinted verbatim in this section. Each comment in the letter was identified with a number. The response to each comment is numbered with the same number as the comment and printed on the opposite page from the comment letter. Two letters (number 22 from NRCS and number 26 from USGS) contained comments on the PRRP DEIS. These comments are identified by shading and are not responded to in this FEIS. They will be responded to in the PRRP FEIS.



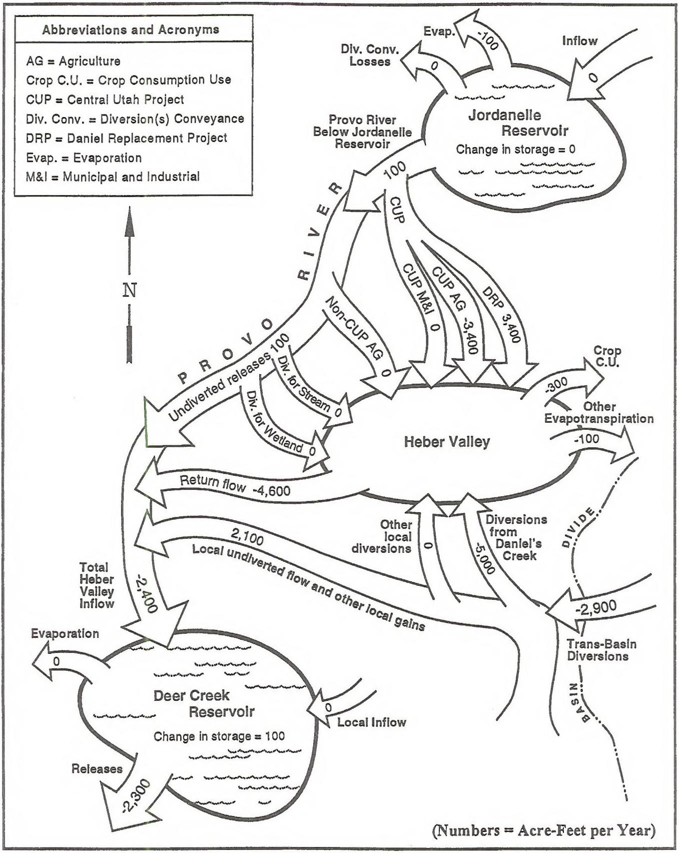
Water Resources Technical Report Figure 4-10
DRP With Pipeline Alternative
Distribution of Water in Heber Valley



Water Resources Technical Report Figure 4-11
Change From Baseline to DRP With Pipeline Alternative
Distribution of Water in Heber Valley



Water Resources Technical Report Figure 4-12
DRP With Canal Alternative
Distribution of Water in Heber Valley



Water Resources Technical Report Figure 4-13
Change From Baseline to DRP With Canal Alternative
Distribution of Water in Heber Valley

The comment responses either explain that the DEIS text has been revised to incorporate the change recommended by the comment or explain why a text change was not appropriate. Text changes were made by preparing errata. The errata are located in Section 4 of the FEIS. The responses to the comments that resulted in preparing errata provide as much specific information as possible (DEIS page and section number) for the reader on the location of the errata.

Table 3-3
Comment Letters

Reference Number	Source of Letter
1*	Provo Water Resources Department
2	Department of Housing and Urban Development Rocky Mt. Region
3	U.S. Department of Commerce
4	Joleen Bell
5	Wasatch County Soil Conservation District
6	Peter Hovingh
7	Daniel Irrigation Company
8	Marilyn Dinger
9	Wasatch Extension Irrigation Company
10	Wasatch County Water Users Association
11	Wasatch County Water Service Area
12	Timpanogos Canal Company
13	Bureau of Reclamation
14	Wasatch County
15	Wasatch County Water Service Area
16	Utah Council Trout Unlimited
17	Provo River Water Users Association
18	Salt Lake County Water Conservancy District
19	Resource Development Coordinating Committee (State of Utah)
20	Department of Health & Human Services
21	Richard Turner
22	Natural Resources Conservation Service
23	Daniel Township Committee
24	Environmental Protection Agency
25	Utah Outdoor Interests Coordinating Council
26	U.S. Geological Survey
27	Army Corps Of Engineers
28	U.S. Forest Service
29	U.S. Fish & Wildlife Service
30	Wasatch Irrigation Company

Note:

*Letters were numbered in the order received at the CUWCD office.

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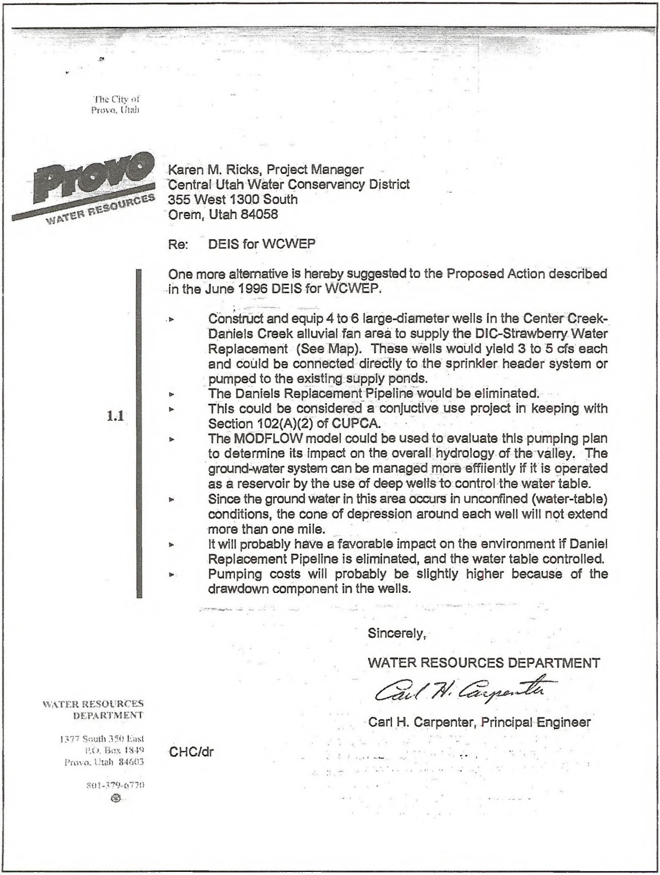
Comment Letter No. 1



The City of
Provo, Utah

Provo
WATER RESOURCES

Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058

Re: DEIS for WCWEP

One more alternative is hereby suggested to the Proposed Action described in the June 1996 DEIS for WCWEP.

- Construct and equip 4 to 6 large-diameter wells in the Center Creek-Daniels Creek alluvial fan area to supply the DIC-Strawberry Water Replacement (See Map). These wells would yield 3 to 5 cfs each and could be connected directly to the sprinkler header system or pumped to the existing supply ponds.
- The Daniels Replacement Pipeline would be eliminated.
- This could be considered a conjuctive use project in keeping with Section 102(A)(2) of CUPCA. 1.1
- The MODFLOW model could be used to evaluate this pumping plan to determine its impact on the overall hydrology of the valley. The ground-water system can be managed more effiiently if it is operated as a reservoir by the use of deep wells to control the water table.
- Since the ground water in this area occurs in unconfined (water-table) conditions, the cone of depression around each well will not extend more than one mile.
- It will probably have a favorable impact on the environment if Daniel Replacement Pipeline is eliminated, and the water table controlled.
- Pumping costs will probably be slightly higher because of the drawdown component in the wells.

Sincerely,

WATER RESOURCES DEPARTMENT

Carl H. Carpenter

Carl H. Carpenter, Principal Engineer

CHC/dr

WATER RESOURCES
DEPARTMENT

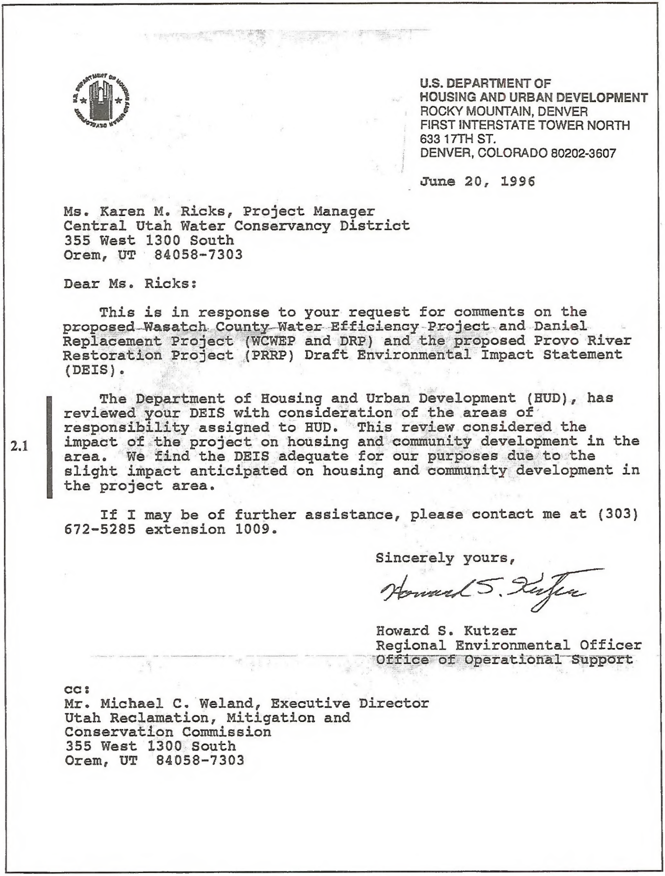
1377 South 350 East
P.O. Box 1849
Provo, Utah 84603

801-379-6770

Responses to Comment Letter No. 1

1.1 The comment suggests that 4 to 6 large diameter wells with capacities of 3-5 cfs could be drilled in the Center Creek-Daniels Creek area to supply the DIC water. However, this would not be practical because the wells would not produce the amount of water required by the project, based on information contained in a report entitled, "Hydrogeologic Study of Groundwater Potential, Heber and Round Valleys and Jordanelle Area" prepared by S. Bryce Montgomery, geologist in June, 1992.

Comment Letter No. 2



U.S. DEPARTMENT OF
HOUSING AND URBAN DEVELOPMENT
ROCKY MOUNTAIN, DENVER
FIRST INTERSTATE TOWER NORTH
633 17TH ST.
DENVER, COLORADO 80202-3607

June 20, 1996

Ms. Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, UT 84058-7303

Dear Ms. Ricks:

This is in response to your request for comments on the proposed Wasatch County Water Efficiency Project and Daniel Replacement Project (WCWEP and DRP) and the proposed Provo River Restoration Project (PRRP) Draft Environmental Impact Statement (DEIS).

2.1 The Department of Housing and Urban Development (HUD), has reviewed your DEIS with consideration of the areas of responsibility assigned to HUD. This review considered the impact of the project on housing and community development in the area. We find the DEIS adequate for our purposes due to the slight impact anticipated on housing and community development in the project area.

If I may be of further assistance, please contact me at (303) 672-5285 extension 1009.

Sincerely yours,

Howard S. Kutzer

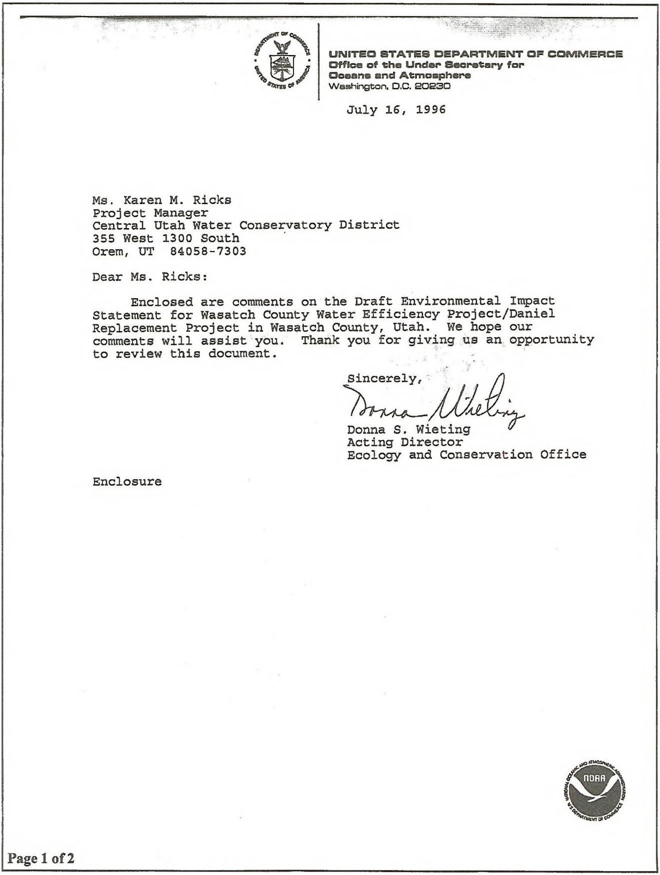
Howard S. Kutzer
Regional Environmental Officer
Office of Operational Support

cc:
Mr. Michael C. Weland, Executive Director
Utah Reclamation, Mitigation and
Conservation Commission
355 West 1300 South
Orem, UT 84058-7303

Responses to Comment Letter No. 2

2.1 Thank you for your comment.

Comment Letter No. 3



UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

July 16, 1996

Ms. Karen M. Ricks
Project Manager
Central Utah Water Conservatory District
355 West 1300 South
Orem, UT 84058-7303

Dear Ms. Ricks:

Enclosed are comments on the Draft Environmental Impact Statement for Wasatch County Water Efficiency Project/Daniel Replacement Project in Wasatch County, Utah. We hope our comments will assist you. Thank you for giving us an opportunity to review this document.

Sincerely,

Donna Wieting

Donna S. Wieting
Acting Director
Ecology and Conservation Office

Enclosure

Page 1 of 2

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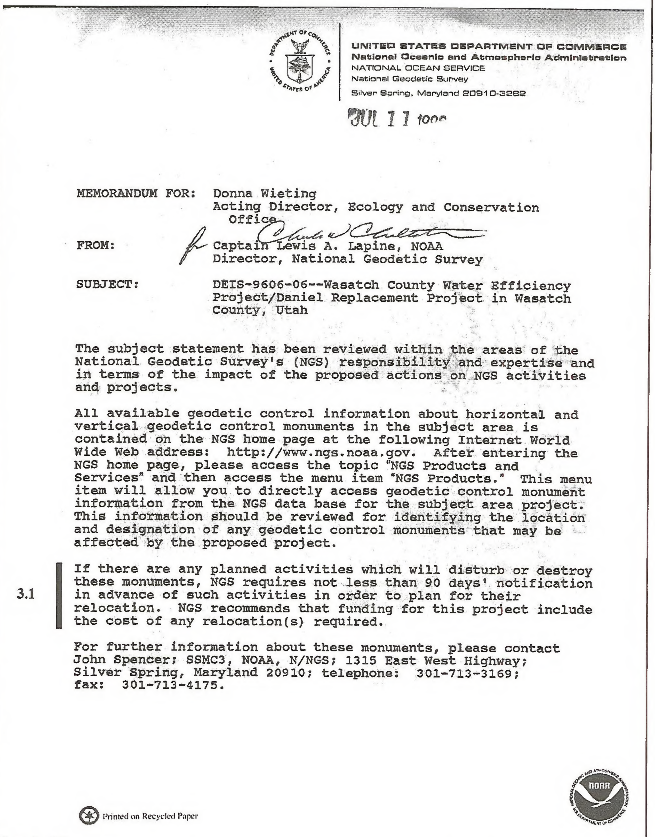
Comment Letter No. 3



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
National Geodetic Survey
Silver Spring, Maryland 20910-3282

JUL 11 1996

MEMORANDUM FOR: Donna Wieting
Acting Director, Ecology and Conservation Office

FROM: Captain Lewis A. Lapine, NOAA
Director, National Geodetic Survey

SUBJECT: DEIS-9606-06--Wasatch County Water Efficiency Project/Daniel Replacement Project in Wasatch County, Utah

The subject statement has been reviewed within the areas of the National Geodetic Survey's (NGS) responsibility and expertise and in terms of the impact of the proposed actions on NGS activities and projects.

All available geodetic control information about horizontal and vertical geodetic control monuments in the subject area is contained on the NGS home page at the following Internet World Wide Web address: http://www.ngs.noaa.gov. After entering the NGS home page, please access the topic "NGS Products and Services" and then access the menu item "NGS Products." This menu item will allow you to directly access geodetic control monument information from the NGS data base for the subject area project. This information should be reviewed for identifying the location and designation of any geodetic control monuments that may be affected by the proposed project.

3.1 If there are any planned activities which will disturb or destroy these monuments, NGS requires not less than 90 days' notification in advance of such activities in order to plan for their relocation. NGS recommends that funding for this project include the cost of any relocation(s) required.

For further information about these monuments, please contact John Spencer; SSMC3, NOAA, N/NGS; 1315 East West Highway; Silver Spring, Maryland 20910; telephone: 301-713-3169; fax: 301-713-4175.

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Page 2 of 2

Responses to Comment Letter No. 3

3.1 Thank you for your comment and information. The National Geodetic Survey will be notified at least 90 days before implementing the project if monuments may be affected by construction.

Comment Letter No. 4

7/28/96

Karen M. Hicks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

My concerns about the Proposed Action for the WCWEP and the DRP are as follows:

The proposed action uses the most mineral resources and energy. The cost appears to be 2-4 times as much initially and then annually as the other alternative proposals. The cost in electricity for the Proposed Action appears to be 2-4 times greater than the alternatives. And the cost of electricity is sure to go up in the future.

4.1 In agriculture there is expected to be a conversion from flood irrigation to sprinkler. Were other forms of irrigation considered such as drip irrigation? Drip irrigation would save considerable water and increase water use efficiency.

4.2 Decrease in wetlands: The net increase in wetlands under the DRP alternatives (74.3 acres) would be larger than under the Proposed Action (53.6 acres). We are losing wetlands at such an alarming rate, it is unfortunate that the Proposed Action could not be at least comparable in wetlands restoration.

4.3 Groundwater levels: Some of the cool, fresh water springs are directly fed by groundwater in the aquifer and these could be affected by the Proposed Action. The water table all over the country is lowering. If the groundwater increased this would also help the wetlands.

The most important redeeming factor about the Proposed Action is the restoration of water flow in the five streams and the Strawberry River. As it stands I see major flaws in the Proposed Action. Perhaps it is necessary to reconsider some important issues.

One last comment, I find it very interesting that the public who participated in your scoping put recreation before water quality and health and safety.

Sincerely,
Joleen H. Bell
2379 East 900 South
Salt Lake City, Utah 84108

Responses to Comment Letter No. 4

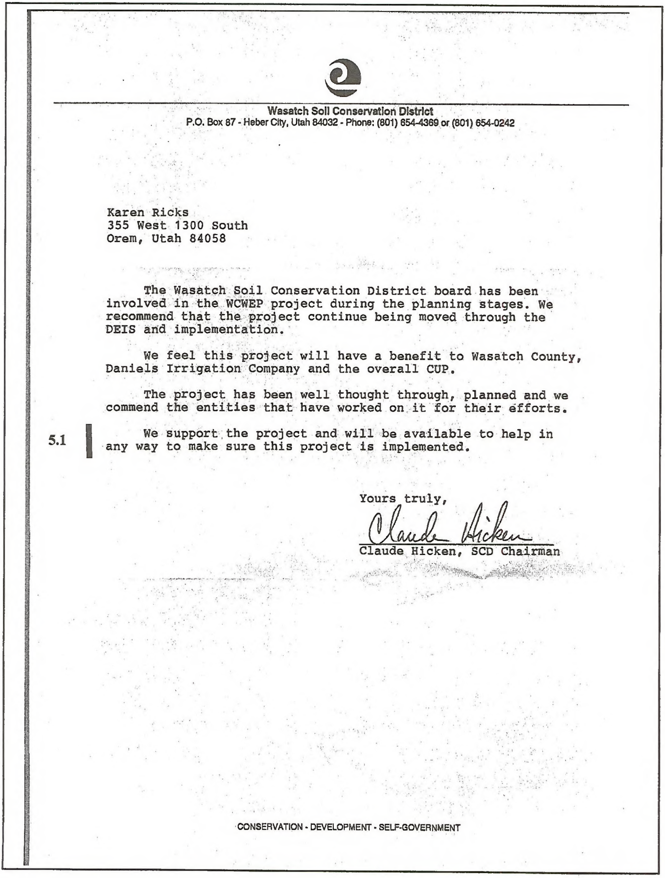
4.1 Other forms of irrigation were considered and sprinkler irrigation was determined to be the most efficient irrigation practice. Drip irrigation is best suited for row and tree crops that have roots along straight lines, which are not grown in the Heber Valley. Drip irrigation is not suited for hay land and pastures that have a dense root cover. Machinery and livestock also would puncture drip irrigation surface lines. Furthermore, the cobbly soils are not suited for buried drip systems. Sprinkler irrigation is widely accepted in the Heber Valley as the most efficient irrigation practice. Sections 1.7.1.2.3 and 3.1.2.1 of the DEIS discuss on-farm improvements.

4.2 Your interpretation of the wetlands enhancement is correct in that the net wetlands enhancement under the Proposed Action would be less than the net increase under the DRP alternatives. Please see the Errata Summary for pages W 3-72, W 3-78 and W 3-79.

4.3 The springs in Heber Valley are not expected to be impacted by the Proposed Action, with the exception of Hatch Spring, which provides flows to Creamery Ditch. As discussed in the Draft EIS, Section 3.2.6.3.6.3, page W 3-46 on wells and springs, impacts under the Proposed Action, Creamery Ditch flows would receive supplemental water at Hatch Spring to reduce potential impacts on the flow of the ditch.

Some wetlands may be impacted by the Proposed Action. As discussed in the Draft EIS, Section 3.4.6.3, page W 3-71, potential wetland impacts that would be caused by lowered groundwater elevations are limited to about a 20.7 acre area. The vast majority of wetlands in Heber Valley would be unaffected by the Proposed Action.

Comment Letter No. 5



Wasatch Soil Conservation District
P.O. Box 87 - Heber City, Utah 84032 - Phone: (801) 654-4369 or (801) 654-0242

Karen Ricks
355 West 1300 South
Orem, Utah 84058

The Wasatch Soil Conservation District board has been involved in the WCWEP project during the planning stages. We recommend that the project continue being moved through the DEIS and implementation.

We feel this project will have a benefit to Wasatch County, Daniels Irrigation Company and the overall CUP.

The project has been well thought through, planned and we commend the entities that have worked on it for their efforts.

5.1 We support the project and will be available to help in any way to make sure this project is implemented.

Yours truly,

Claude Hicken

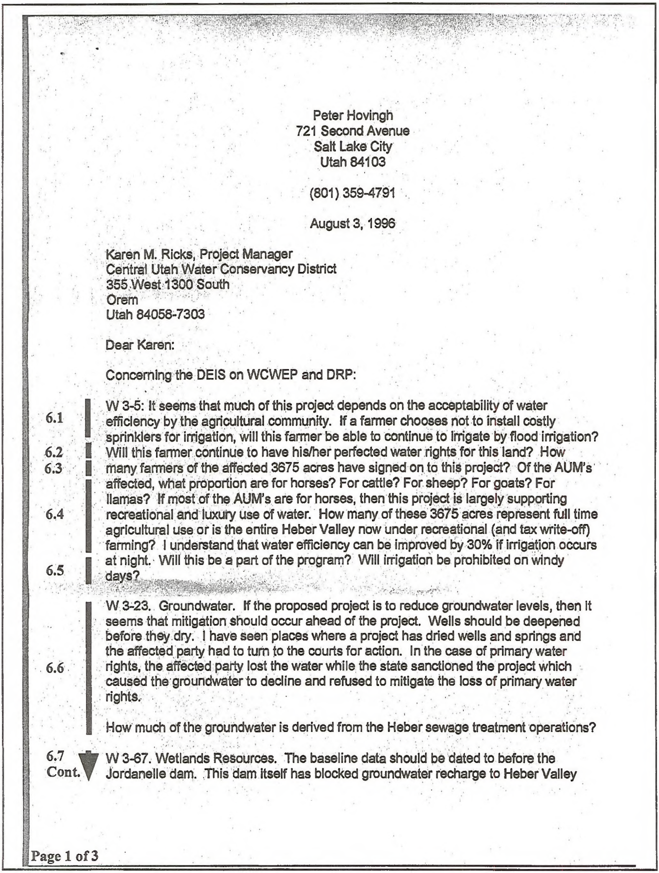
Claude Hicken, SCD Chairman

CONSERVATION - DEVELOPMENT - SELF-GOVERNMENT

Responses to Comment Letter No. 5

5.1 Thank you for your comments and input. They will be considered in the decision making process.

Comment Letter No. 6



Peter Hovingh
721 Second Avenue
Salt Lake City
Utah 84103

(801) 359-4791

August 3, 1996

Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem
Utah 84058-7303

Dear Karen:

Concerning the DEIS on WCWEP and DRP:

6.1 W 3-5: It seems that much of this project depends on the acceptability of water efficiency by the agricultural community. If a farmer chooses not to install costly sprinklers for irrigation, will this farmer be able to continue to irrigate by flood irrigation?
6.2 Will this farmer continue to have his/her perfected water rights for this land? How
6.3 many farmers of the affected 3675 acres have signed on to this project? Of the AUM's
6.4 affected, what proportion are for horses? For cattle? For sheep? For goats? For llamas? If most of the AUM's are for horses, then this project is largely supporting recreational and luxury use of water. How many of these 3675 acres represent full time agricultural use or is the entire Heber Valley now under recreational (and tax write-off) farming? I understand that water efficiency can be improved by 30% if irrigation occurs
6.5 at night. Will this be a part of the program? Will irrigation be prohibited on windy days?

6.6 W 3-23. Groundwater. If the proposed project is to reduce groundwater levels, then it seems that mitigation should occur ahead of the project. Wells should be deepened before they dry. I have seen places where a project has dried wells and springs and the affected party had to turn to the courts for action. In the case of primary water rights, the affected party lost the water while the state sanctioned the project which caused the groundwater to decline and refused to mitigate the loss of primary water rights.

How much of the groundwater is derived from the Heber sewage treatment operations?

6.7 Cont. W 3-67. Wetlands Resources. The baseline data should be dated to before the Jordanelle dam. This dam itself has blocked groundwater recharge to Heber Valley

Page 1 of 3

Responses to Comment Letter No. 6

6.1 It is possible that a farmer could continue to flood irrigate, though not likely. If the Proposed Action is constructed, it would alter the delivery of water to individual water users in two ways: 1) the water would be delivered under pressure, and 2) the quantity of water delivered would be less than historical deliveries for flood irrigation (see page W 1-19, Section 1.8.1 of the DEIS). These changes would affect all individuals within a participating irrigation company and would make continued flood irrigation unattractive.

6.2 As noted in the response to Comment 6.1, water deliveries under the Proposed Action would be reduced from historical deliveries under flood irrigation. Water rights, as evidenced by shares in an irrigation company, are administered by the State Engineer. Any impact on water rights would be determined by the State Engineer during the water rights change application process.

6.3 Participation in the project is based on irrigation companies rather than individuals. All affected irrigation companies have chosen to participate in the project.

6.4 The analysis in the EIS evaluated the impacts of the Proposed Action and alternatives on baseline crop production in the Heber Valley. Pasture yields were estimated based on prevailing soil characteristics, climatic conditions, method of irrigation and irrigation water supply.

Pasture yields were estimated from these factors without consideration for the types of animals that could be pastured. The types of animals pastured was not a factor in the analysis performed and would not affect the results and conclusions of the Draft EIS analysis. Determining the proportion of the various types of grazing animals would be unnecessary to assess the impacts on crop production from the Proposed Action and alternatives. Even though some pastures in the Heber Valley are used to graze horses and other types of livestock, most of the pasture lands are used to raise cattle (see Section 3.11.5 on page W 3-122). The analysis in the Draft EIS assumed that the affected lands would be used for full time agricultural purposes.

6.5 Irrigation presently occurs both day and night. This practice would continue. Water is available 24 hours a day at a relatively constant daily rate from the river and local streams. Because local landowners do not have rights to store most of the present water supply, they must irrigate when the water is available, regardless of time of day or weather conditions. During the peak irrigation season there would be demand for all of the available daily water supply. Restricting water use to certain periods would result in loss of water that could have been used to meet crop needs and increased irrigation shortages. Therefore, irrigation would not be prohibited on windy days, or restricted to night sprinkling.

6.6 The groundwater levels shown in the Draft EIS were estimated from the best available data. Map 3-5 (page W 3-47) is therefore the most detailed figure that can be provided at this time. It is not possible to determine exactly which wells would be impacted by the Proposed Action. However, as stated in Sections 3.2.6.3.6, 3.2.6.3.7 (page W 3-49) and 3.19.2 (pages W 3-170 and W 3-171), a reserve fund would be set aside by CUWCD for monitoring groundwater levels to determine which wells are impacted by the Proposed Action. Monitoring would begin "before construction of the Proposed Action and for 6 years after it becomes operational to determine which wells would be affected." CUWCD mitigation for affected wells could include re-drilling the wells or providing a connection to a domestic water distribution system or providing alternative water supplies.

Recharge from the regional wastewater treatment facility is not considered a major groundwater source. Although minor, potential groundwater recharge from the regional wastewater treatment facility would not change as a result of the Proposed Action, and therefore it was a constant in model runs with and without the Proposed Action.

6.7 Cont. through the blockage of hyporheic flows of the Provo River.

6.8 W 3-80. 3.5.5.3. Benthic macroinvertebrates are more than aquatic insects. They also include crustaceans, leeches and mollusks. It should be noted that the mollusk *Ferrissia rivularis* is very rare (one limpet was found in Reach 6 after much searching) in the Provo River. Mussels *Margaritifera falcata* and *Anodonta californiensis* may have been exterminated from the Provo River. Flood snails *Fluminicola* only occur in Reach 3 in the entire Provo River drainage. Increased production of introduced trout in this reach of the Provo River will have a continued effect on the macro-invertebrates and the past management of the Provo River dedicated to agriculture and to game fisheries contributed to the extermination of the above mollusks.

6.9 W 3-94. Wildlife Resouces which includes amphibians. The DEIS states "There would be no significant impacts on non game wildlife species because no habitat types of important non-game species would be permanently removed." This phoney argument hinges on someones definition of important non-game species. What is the Conservancy Districts list of important non-game species. The amphibians that have disappeared from Heber Valley or are greatly reduced in numbers include *Bufo boreas, Bufo woodhousii* and *Rana pipiens*. Are these amphibians included in the important non game wildlife species?

6.10 W 3-104. Spotted frog: Where is the spotted frog found at 10,000 feet elevation? Quoting non-reviewed gray literature sometimes gives readers false impressions. Also "hibernate in holes near springs.." suggests habitats with holes. Perhaps one means hyporheic zone of wetlands. W 3-105: "Presence of spotted frogs in the upper Strawberry River basin is unlikely because of past rotenone treatments and lack of historical sightings." Could it be that the spotted frog is not found in the Colorado River drainage for geographical reasons? The Division of Wildlife Resources did do a spotted frog survey for the upper Strawberry River basin before the big rotenone treatment. W 3-109. See appendix concerning minimal mitigation efforts for spotted frogs in affected project area.

Sincerely,

Peter Hovingh

Peter Hovingh

Page 2 of 3

6.7 Baseline conditions as described for water resources in Section 3.2.5 of the Draft EIS include conditions that would occur in the future with full delivery of CUP agriculture and M&I water. This future demand condition was defined by assuming Jordanelle Dam is in place and fully operational, which will occur whether or not the WCWEP or DRP are ever built. This is why Jordanelle Dam and its effects are included in baseline conditions for all of the Draft EIS resource topics. Since baseline conditions must include Jordanelle Dam, any effects or potential effects it may have had on groundwater or wetlands is a pre-project, baseline condition.

6.8 The WCWEP and DRP would have no impact on other aquatic resources within the Provo River. This is based on the fact that the WCWEP and DRP would only cause minor changes in Provo River flows (see Table 3-13 on page W 3-40, Table 3-16 on page W 3-51 and Table 3-18 on page W 3-55 of the Draft EIS) and would not increase fish stocking in the Provo River (see Section 3.5.6.3.1.2 on page W 3-90).

6.9 Section 3.6.5.2 of the Draft EIS (page W 3-95) mentions mammals, birds, reptiles, and amphibians that are considered in the non-game wildlife species category. Individual species are identified in the Draft Aquatic Resources Technical Report, Section 3.2.3, page W 3-12, which does include *Rana pipiens* and *Bufo woodhousei*. Based upon your comment, the *Bufo boreas* will be added to the Final Aquatic Resources Technical Report. The conclusion reached in Section 3.6.6.3.1.2 that no significant impacts on non-game wildlife species would occur is based on the results of the wetlands analysis in Section 3.4.6.3.6 of the Draft EIS (page W 3-74).

6.10 Thank you for your comments regarding the spotted frog. The references used consist of several reports prepared by the Utah Division of Wildlife Resources, two accepted journal articles, and a federal document that summarizes habitat from information presented by a number of approved sources, which were reviewed prior to publishing. Thus, CUWCD believes that the information presented in the Draft EIS is accurate and represents the best available data for the spotted frog. This includes the elevational range of the species and areas used for hibernation.

To address the historical absence of spotted frogs in the Colorado River drainage and, consequently, in the upper Strawberry River basin, the portion of the last sentence in Section 3.7.5.5 that suggests the presence of spotted frogs is unlikely because of past rotenone treatments has been changed. Please see the Errata Summary for page W 3-105.

Thank you for your comments on the minimal mitigation measures for spotted frog. They will be considered in implementing the mitigation measures for the spotted frog that are identified in Section 3.19.4 of the DEIS.

MINIMAL MITIGATION EFFORTS FOR SPOTTED FROGS IN AFFECTED HABITATS OF WCWEP, DRP, AND PRRP.

Past efforts of the Jordanelle Dam and Reservoir Project have only consciously mitigated the destruction of spotted frogs by translocation of eggs, tadpoles, and adults. Since this effort was done haphazardly and not professionally, there is no way in which the mitigation and consequently the efforts of translocation can be assessed as to its effectiveness. One can not assume that dumping frogs in water is effective translocation and preservation. One can not assume that destruction of frog habitat and frogs and subsequently restoring the habitat will bring the frogs back.

Thus all adult frogs must be individually marked and monitored for the duration of the 30 year project that are involved with the affected habitat and any translocation. The techniques are well known for ampnibians. If toe-clipping is used, the clipped toes must be preserved for genetic studies. Such studies are now occurring in Nevada, Idaho, and Oregon. Only by marking individual amphibians can one assess the results of such mitigation. As a corollary to the marking of spotted frogs, a thorough follow up must occur including resurveys throughout the frog season for at least 10 years and a full population analysis including growth and recovery population statistics, must be completed.

If the project effects the habitat of more than one percent of the total population in Heber Valley (1996 surveys show a total of 468 egg masses), then the project must create new habitat prior to the destruction of the old habitat that is fully functional for spotted frogs. Since the PRRP project claims that amphibians will like the final project, it is recommended that those stretches of river are first restored that do not have spotted frogs to offset future "temporary" losses to determine, if indeed, the river restoration is beneficial to spotted frogs. Construction of the project must first occur in those reaches that do not have frogs to assess if frogs will move into the new habitat.

All effected spotted frog habitat must be assessed in terms of geographical continuity with nearest populations. All barriers between the two populations must be removed including culverts.

If the project "improvements" involve more than 10% of the spotted frogs in Heber Valley, the Spotted Frog Conservation Team would be advised to emergency listing of the spotted frog as threatened or endangered.

The relationship on numbers of egg masses to numbers of juveniles and adults must be determined.

All of these efforts must be monitored by the Spotted Frog Conservation Team.

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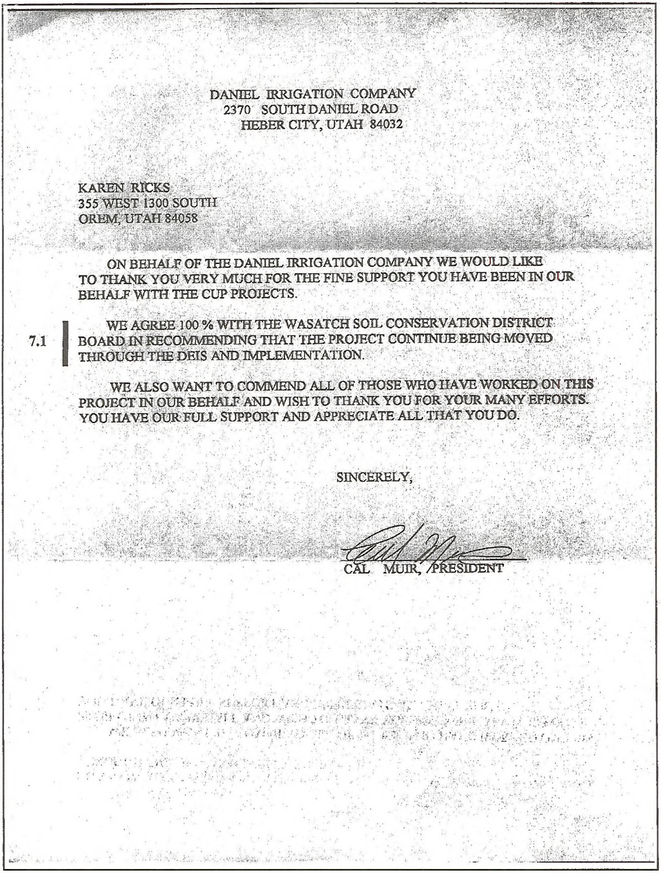
Comment Letter No. 7



DANIEL IRRIGATION COMPANY
2370 SOUTH DANIEL ROAD
HEBER CITY, UTAH 84032

KAREN RICKS
355 WEST 1300 SOUTH
OREM, UTAH 84058

ON BEHALF OF THE DANIEL IRRIGATION COMPANY WE WOULD LIKE TO THANK YOU VERY MUCH FOR THE FINE SUPPORT YOU HAVE BEEN IN OUR BEHALF WITH THE CUP PROJECTS.

7.1 WE AGREE 100 % WITH THE WASATCH SOIL CONSERVATION DISTRICT BOARD IN RECOMMENDING THAT THE PROJECT CONTINUE BEING MOVED THROUGH THE DEIS AND IMPLEMENTATION.

WE ALSO WANT TO COMMEND ALL OF THOSE WHO HAVE WORKED ON THIS PROJECT IN OUR BEHALF AND WISH TO THANK YOU FOR YOUR MANY EFFORTS. YOU HAVE OUR FULL SUPPORT AND APPRECIATE ALL THAT YOU DO.

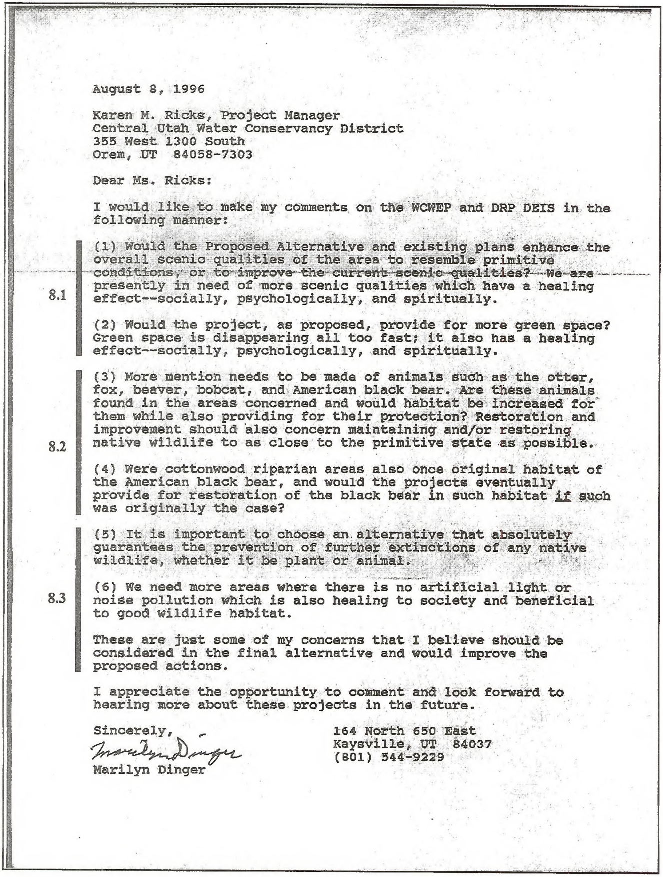
SINCERELY,

CAL MUIR, PRESIDENT

Responses to Comment Letter No. 7

7.1 Thank you for your comments and input. They will be considered during the decision-making process.

Comment Letter No. 8



August 8, 1996

Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, UT 84058-7303

Dear Ms. Ricks:

I would like to make my comments on the WCWEP and DRP DEIS in the following manner:

8.1 (1) Would the Proposed Alternative and existing plans enhance the overall scenic qualities of the area to resemble primitive conditions, or to improve the current scenic qualities? We are presently in need of more scenic qualities which have a healing effect--socially, psychologically, and spiritually.

(2) Would the project, as proposed, provide for more green space? Green space is disappearing all too fast; it also has a healing effect--socially, psychologically, and spiritually.

8.2 (3) More mention needs to be made of animals such as the otter, fox, beaver, bobcat, and American black bear. Are these animals found in the areas concerned and would habitat be increased for them while also providing for their protection? Restoration and improvement should also concern maintaining and/or restoring native wildlife to as close to the primitive state as possible.

(4) Were cottonwood riparian areas also once original habitat of the American black bear, and would the projects eventually provide for restoration of the black bear in such habitat if such was originally the case?

8.3 (5) It is important to choose an alternative that absolutely guarantees the prevention of further extinctions of any native wildlife, whether it be plant or animal.

(6) We need more areas where there is no artificial light or noise pollution which is also healing to society and beneficial to good wildlife habitat.

These are just some of my concerns that I believe should be considered in the final alternative and would improve the proposed actions.

I appreciate the opportunity to comment and look forward to hearing more about these projects in the future.

Sincerely,

Marilyn Dinger
Marilyn Dinger

164 North 650 East
Kaysville, UT 84037
(801) 544-9229

Responses to Comment Letter No. 8

8.1 The Proposed Action and alternatives would not enhance the overall scenic qualities of Heber Valley. See Chapter 3, Section 3.15.6.3.2, page W 3-156, right column. However, as summarized in Section 3.15.6.3.3 on page W 3-157, the Proposed Action would cause only minor visual changes that are not considered significant because they are not out of character with the existing landscape.

Scenic qualities of Strawberry Valley would be improved by the following:

- Restoring flows to historically dry streams
- Resultant increases in vegetation and wetlands may be more scenic because of increased diversity of plant life and wildlife use
- Diversion facilities and some of the canals would be removed and restored, which would reduce visual signs of human presence in the area

The positive visual impacts on the upper Strawberry River basin are further described in Section 3.15.6.3.2 on page W 3-157.

8.2 Chapter 3, Section 3.6.5.1.1 (page W 3-95) states that American black bear and other mammal species would more likely inhabit upper Daniels Canyon and the upper Strawberry River basin compared to the relatively developed Heber Valley. Other mammal species include river otter, red fox, beaver, and bobcat. Chapter 3, Section 3.6.6.3.1.1(page W 3-96) concludes that the Proposed Action would have no significant impacts on game species and their habitat, and would not increase habitat for game species. The Proposed Action was formulated to meet the purposes presented in Chapter 1, Section 1.2.2 on page W 1-2. The related purposes are focused on supplementing instream flows of some streams and minimizing adverse impacts on environmental resources. Management of native wildlife and their habitat is under the jurisdiction of the State of Utah and not the CUWCD.

Cottonwood riparian areas undoubtedly provide habitat for black bear. As stated in Chapter 3, Section 3.6.5.1.1 (page W 3-95), black bear would be unlikely in Heber Valley but may occasionally frequent the upper Daniels Canyon area. There is no provision to restore black bear within the impact area of influence under the Proposed Action or DRP alternatives.

8.3 Section 3.7 of the DEIS, pages W 3-100 through W 3-110, summarizes the information and analysis that was done for threatened, endangered and candidate species. In its July 11, 1996 letter to the CUWCD, the U.S. Fish and Wildlife Service indicated that it concurred in the CUWCD's finding of a "no effect" determination for threatened or endangered species for the WCWEP and DRP and therefore no biological opinion would be required for the project. Section 3.14 of the DEIS, pages W 3-151 through W 3-154, addresses noise issues associated with the construction and operation and maintenance of the various alternatives. The impacts are not considered significant.

Comment Letter No. 9

Karen Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

Dear Karen,

The Wasatch Extension Irrigation Company's board of directors are in full support of the Wasatch County Water Efficiency Project.

9.1 The project would help our problems of water distribution and help the farmers to apply their water more uniformly.

The DEIS reflects our needs and wants. We are in favor of this document along with the concepts that are included in it.

Thank You,

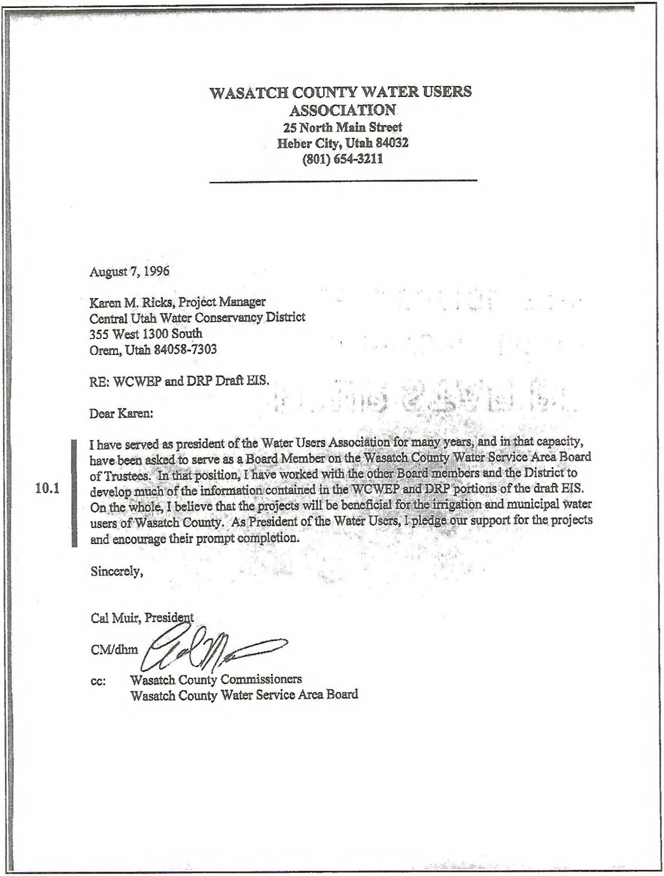
Claude

Claude Hicken, President
Wasatch Extension Irrigation Company

Responses to Comment Letter No. 1

9.1 Thank you for your comments and input. They will be considered during the decision-making process.

Comment Letter No. 10



WASATCH COUNTY WATER USERS ASSOCIATION
25 North Main Street
Heber City, Utah 84032
(801) 654-3211

August 7, 1996

Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

RE: WCWEP and DRP Draft EIS.

Dear Karen:

10.1 I have served as president of the Water Users Association for many years, and in that capacity, have been asked to serve as a Board Member on the Wasatch County Water Service Area Board of Trustees. In that position, I have worked with the other Board members and the District to develop much of the information contained in the WCWEP and DRP portions of the draft EIS. On the whole, I believe that the projects will be beneficial for the irrigation and municipal water users of Wasatch County. As President of the Water Users, I pledge our support for the projects and encourage their prompt completion.

Sincerely,

Cal Muir, President

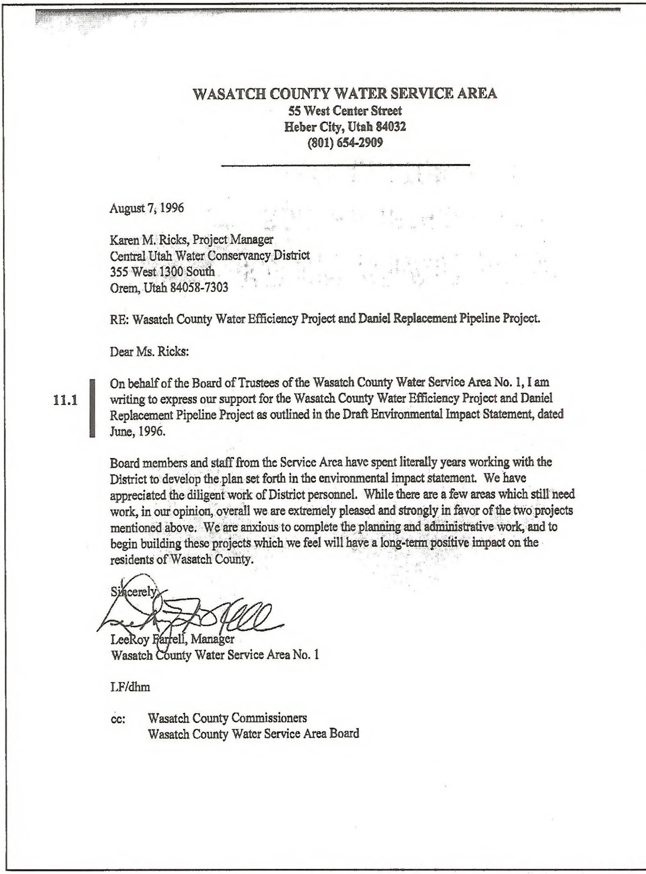
CM/dhm

cc: Wasatch County Commissioners
Wasatch County Water Service Area Board

Responses to Comment Letter No. 10

10.1 Thank you for your comments and input. They will be considered during the decision-making process.

Comment Letter No. 11



WASATCH COUNTY WATER SERVICE AREA
55 West Center Street
Heber City, Utah 84032
(801) 654-2909

August 7, 1996

Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

RE: Wasatch County Water Efficiency Project and Daniel Replacement Pipeline Project.

Dear Ms. Ricks:

11.1 On behalf of the Board of Trustees of the Wasatch County Water Service Area No. 1, I am writing to express our support for the Wasatch County Water Efficiency Project and Daniel Replacement Pipeline Project as outlined in the Draft Environmental Impact Statement, dated June, 1996.

Board members and staff from the Service Area have spent literally years working with the District to develop the plan set forth in the environmental impact statement. We have appreciated the diligent work of District personnel. While there are a few areas which still need work, in our opinion, overall we are extremely pleased and strongly in favor of the two projects mentioned above. We are anxious to complete the planning and administrative work, and to begin building these projects which we feel will have a long-term positive impact on the residents of Wasatch County.

Sincerely,

LeeRoy Farrell, Manager
Wasatch County Water Service Area No. 1

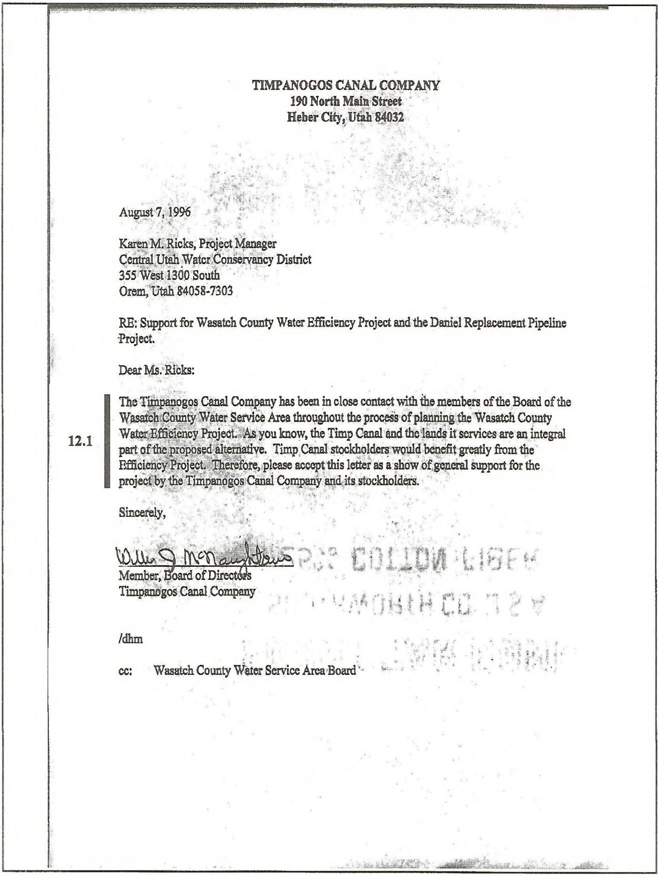
LF/dhm

cc: Wasatch County Commissioners
Wasatch County Water Service Area Board

Responses to Comment Letter No. 11

11.1 Thank you for your comments and input. They will be considered during the decision-making process.

Comment Letter No. 12



TIMPANOGOS CANAL COMPANY
190 North Main Street
Heber City, Utah 84032

August 7, 1996

Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

RE: Support for Wasatch County Water Efficiency Project and the Daniel Replacement Pipeline Project.

Dear Ms. Ricks:

12.1 The Timpanogos Canal Company has been in close contact with the members of the Board of the Wasatch County Water Service Area throughout the process of planning the Wasatch County Water Efficiency Project. As you know, the Timp Canal and the lands it services are an integral part of the proposed alternative. Timp Canal stockholders would benefit greatly from the Efficiency Project. Therefore, please accept this letter as a show of general support for the project by the Timpanogos Canal Company and its stockholders.

Sincerely,

Willie J McNaughton
Member, Board of Directors
Timpanogos Canal Company

/dhm

cc: Wasatch County Water Service Area Board

Responses to Comment Letter No. 12

12.1 Thank you for your comments and input. They will be considered during the decision-making process.

United States Department of the Interior

BUREAU OF RECLAMATION
Upper Colorado Region
Provo Area Office
302 East 1860 South
Provo, Utah 84606-7317

IN REPLY REFER TO:

PRO-750
ENV-6.00

AUG 13 1996

Ms. Karen M. Ricks
Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem UT 84058-7303

Subject: Bureau of Reclamation Comments on the Draft Environmental Impact Statement for the Wasatch County Water Efficiency Project and Daniel Replacement Project

Dear Ms. Ricks:

This office received and reviewed the subject document. This letter contains the comments of the Bureau of Reclamation on the subject document from both the Provo Area Office and Upper Colorado Regional Office. We appreciate the opportunity to review and comment on the document and offer the following comments for your consideration in preparation of the final document.

First, we will discuss general comments which apply to the document as a whole. They are followed by specific comments directed to specific references in the document.

GENERAL COMMENTS:

13.1 1. Document Structure - Reclamation believes the general outline of the document is too complicated. The numbering system used in both the Table of Contents and in the body of the document are confusing and unnecessarily break the narrative into too many small pieces. Our reviewers of the document had a difficult time following both the structure and content of the document. Reclamation recommends that the document be simplified in both its outline and presentation. Example: Table of Contents, Page Wv, Section S.3, Chapter 2 - Affected Environment and Environmental Consequences: S.3.1 Areas of Controversy or Concern and S.3.2 Major Impact Conclusions could be synthesized into one section titled Summary of Impacts, Concerns and Controversy. Similar simplifications could be made throughout the document. Further, the inclusion of two draft environmental impact statements in one volume added to both the complexity and magnitude of the document making it difficult for us to clearly understand the proposed action and its impacts.

13.2 Cont. 2. Environmental Justice - The document does not address or discuss environmental justice. Reclamation believes there should be a discussion regarding environmental justice in this document. The requirement for such a section in the document is based on Executive Order 12898, dated February 11, 1994. A Departmental Memorandum issued on May 30, 1995, makes environmental justice a requirement in all Department of the Interior NEPA documents:

> "Therefore, henceforth all environmental documents should specifically analyze and evaluate the impacts of any proposed projects, actions, or decisions on minority and low-income populations and communities, as well as the equity of the distribution of the benefits and risks of those decisions.

Responses to Comment Letter No. 13

13.1 Thank you for your comments. The FEIS has been separated into two documents.

13.2 The socioeconomics portion of the EIS analysis did address environmental justice concerns. This element of the analysis should have been noted in the EIS and appropriate text has been added to the Errata Summary for Section 3.12.6.2. on page W 3-135. The social impact assessment considered including minority and low-income populations as social population groups along with the other population groups that were presented in the analysis. However, it was determined there would not be a potential for significant and adverse impacts on minority and low-income populations given the fact that such populations are for the most part not present in Heber Valley.

13.2 Cont.

> To comply with the environmental justice policy established by the Secretary, bureaus and offices should identify and evaluate, during the scoping and/or planning processes, any anticipated effects, direct or indirect, from the proposed project, action or decision on minority and low-income populations and communities, including the equity of distribution of the benefits and risks."

Please contact Jacqueline Murphy at 801-524-5580 for additional information and copies of the draft guidance regarding environmental justice.

13.3

3. Indian Trust Assets - The document contains no discussion of Indian trust assets. Reclamation believes that Secretarial Order No. 3175 regarding departmental responsibilities for Indian trust resources applies to this project. The order states that, "The heads of bureaus and offices are responsible for being aware of the impact of their plans, projects, programs or activities on Indian trust resources. Bureaus and offices, when engaged in the planning of any proposed project or action, will ensure that any anticipated effects on Indian trust resources are explicitly addressed in the planning, decision and operational documents; i.e. Environmental Assessments, Environmental Impact Statements, Management Plans, etc., that are prepared for the project."

Reclamation recommends that Indian Trust Assets be addressed in the document to be consistent with the Secretarial Order. The District should describe how and with whom the consultation regarding trust assets was conducted and the results of that consultation. Additional guidance regarding the federal, Departmental, Reclamation and Upper Colorado regional policies for Indian Trust Assets will be made available to you. Please contact Kib Jacobsen at 801-524-6861 for further information.

SPECIFIC COMMENTS:

13.4	Abstract	Two of the three alternatives listed in this document are DRP without WCWEP. The document title should be reconsidered accordingly.
13.5	Page W S-1	Section S.1.1 states that the Aquatic Mitigation Plan compensated for adult trout habitat lost due to construction of the Strawberry Aqueduct and Collection System. Spawning was not addressed.
13.6	Page W S-1	Section S1.1 states that the Aquatic Mitigation Plan was intended to mitigate the effects of the Strawberry Aqueduct and Collection System, rather than inundation associated the enlargement of Strawberry Reservoir, as implied here.
13.7	Page W S-1	Section S1.1, the last listed 'purpose' appears to be the same as the first listed 'need'. Is this issue a project purpose or a project need?
13.8	Page W S-1	Section S.1.2, Whereas two of the three proposed alternatives do not meet the first two project purposes listed, a re-ordering of the project purposes should be considered.
13.9	Page W S-1	Section S.1.2.1, P.L. 102-575 stipulates construction of a pipeline from Jordanelle Reservoir to the existing DIC water storage facilities (Section 303(a)(3)(A)). The location of the proposed pipeline in this alternative does not appear to meet this requirement.
13.10	Page W S-2	Section S.1.2.1, if conversion to sprinkler irrigation is not part of the proposed action, is voluntary, and would be dependent upon funding by another agency, is it appropriate to assume it will occur in this document?

13.3 Based on a letter dated November 8, 1996 from the Bureau of Indian Affairs, there are no legal holdings in the project area that could be considered Indian trust assets.

13.4 Thank you for the editorial comment.

13.5 Please see the FEIS Summary and the Errata Summary for changes to Section 1.2.1 on page W 1-2.

13.6 Please see response to Comment 13.5.

13.7 The last listed "purpose" relates to the abandonment and removal of the upper Strawberry River diversion facilities by the U.S. Forest Service (refer to Section 1.8.7 page W 1-49 in the DEIS), whereas the first listed "need" relates only to the restoration of flows in the upper Strawberry River.

13.8 The listing of the project purposes does not imply a priority order.

13.9 Section 303(b)(3)(A) of CUPCA states that a pipeline shall be constructed "for the purpose of providing a permanent replacement of water" to the DIC. The Proposed Action fulfills that purpose at a lower cost and in a more environmentally acceptable manner by including a relatively short pipeline rather than a longer pipeline that would travel the entire distance between Jordanelle Reservoir and DIC (see Section 1.13.2 on page W 1-74).

13.10 It is appropriate to assume that conversion to sprinkler irrigation would occur with the Proposed Action because, if the Proposed Action is constructed, it would alter the delivery of water to individual water users in two ways: 1) the water would be delivered under pressure, and 2) the quantity of water delivered would be less than historical deliveries for flood irrigation. These changes would essentially preclude continued flood irrigation and would facilitate the conversion to sprinkler irrigation.

13.11	Page W S-2	Section S.1.2.3, P.L. 102-575 stipulates construction of a pipeline from Jordanelle Reservoir to the existing DIC water storage facilities (Section 303(a)(3)(A)). The location of the proposed pipeline in this alternative does not appear to meet this requirement.
13.12	Page W S-3	Section S.2.1, can project water be used in the DIC service area?
13.13	Page W S-3	Section S.2.1, if the conversion to sprinkler systems is not part of the proposed action, is not required, and is dependent upon another agency for funding and implementation, it is inappropriate to assume that CUP agricultural water availability would not change.
13.14	Page W 1-2	Section 1.2.1, the Aquatic Mitigation Plan compensated for adult trout habitat lost due to construction of the Strawberry Aqueduct and Collection System. Spawning was not addressed.
13.15	Page W 1-2	Section 1.2.1, the Aquatic Mitigation Plan was intended to mitigate the effects of the Strawberry Aqueduct and collection system, rather than inundation associated the enlargement of Strawberry Reservoir, as implied here.
13.16	Page W 1-2	Section 1.2.2, if two of the three proposed alternatives do not meet the first two project purposes listed, a re-ordering of the project purposes should be considered.
13.17	Page W 1-4	Section 1.3.2, P.L. 102-575 stipulates construction of a pipeline from Jordanelle Reservoir to the existing DIC water storage facilities (Section 303(a)(3)(A)). The location of the proposed pipeline in this alternative does not appear to meet this requirement.
13.18	Page W 1-4	Section 1.3.2., if the conversion to sprinkler systems is not part of the proposed action, is not required, and is dependent upon another agency for funding and implementation, it is inappropriate to assume that CUP agricultural water availability would not change.
13.19	Page W 1-4	Section 1.3.2, who will pay the pumping cost?
13.20	Page W 1-4	Sections 1.3.3 and 1.3.4, two of the alternatives that are included in this document do not meet half of the defined project purposes. Many of the projects listed in this section meet more of the defined project purposes than do those alternatives still under consideration. It thus appears that some other criteria was used for the elimination of these alternatives than that stated in this paragraph.
13.21	Page W 1-4	The discussion of the Proposed Action in Section 1.3.2 refers to Map A-1 for the location of the major physical features of the Proposed Action. The Provo River downstream from Deer Creek Dam is identified as in the "Project Area". However, we could not find any physical feature of the Proposed Action described on this page that is located there.

13.11 Please see the response to Comment 13.9.

13.12 Project water could be used in the DIC service area. The DIC service area lands have been certified and classified by the USBR and are therefore eligible to contract for project water through the CUWCD and WCSSA.

13.13 Please see the response to Comment 13.10.

13.14 Please see the response to Comment 13.5.

13.15 Please see the response to Comment 13.5.

13.16 Please see the response to Comment 13.8.

13.17 Please see the response to Comment 13.9.

13.18 Please see the response to Comment 13.10.

13.19 Please see the Errata Summary for changes to page W 1-68.

13.20 As stated in the first paragraph of Section 1.13 (page W 1-74 of the DEIS), in addition to project purposes and needs, the criteria of minimizing environmental and economic impacts (cost) were also considered in eliminating alternatives from detailed analysis. Meeting project purposes is not an all-inclusive criterion for selection of alternatives.

13.21 There are no physical features of the Proposed Action located below Deer Creek Reservoir. The Project Area is defined as both the area where physical features would be constructed as well as the area that could be impacted by the project.

13.22	Page W 1-47	Table 1-13, under "Deliveries", identifies 2,480 acre-feet of water to be used for "Non-CUP Wetland Maintenance". It is unclear where this water originates from or how it was accounted for. It is also unclear in Table 1-13 how the 3,670 acre-feet of "conserved water" is calculated. There are references to the effect that state, "...by decreasing the amount of unconsumed irrigation water in the Heber Valley, there would be a reduction in the amount of water lost within the Heber valley. This reduction in overall consumed water in the valley offsets the loss of return flow to the Provo River from the termination of the transbasin diversion from the Strawberry River" (page W 4-10 of the draft Water Resources Technical Report). Also, Section 1.6.3 on page W1-14 states that, "Even if the following year is dry, approximately 15,000 acre-feet of water would be conserved and used to refill borrowed storage in Jordanelle Reservoir". Because "conserved water" is a key element of the Proposed Action, we suggest that a clear description, including numbers and computational methods, be included in the document.
13.23	Page W 1-76	Section 1.13.8, the second rationale used to eliminate this alternative from further consideration would also eliminate two of the three alternatives listed in this document, including the preferred alternative.
13.24	Page W1-77	Section 1.13.8, is this release down the Strawberry River in addition to the portion of the 44,400 acre-foot allocation to the Strawberry River?
13.25	Page W 1-77	Section 1.13.10, Reclamation did not determine that this alternative was not feasible. What is included in this section (bullets) is a list of issues that would need resolved if this alternative were to be pursued. Similar issues were identified for all alternatives investigated by Reclamation, and reported with no determination as to feasibility.
13.26	Page W 1-77	Section 1.13.11, Reclamation did not determine that this alternative was not feasible. What is included in this section is a list of issues that would need resolved if this alternative were to be pursued. Similar issues were identified for all alternatives investigated by Reclamation, and reported with no determination as to feasibility.
13.27	Page W 1-77	Section 1.13.11, the cost of this action was not prohibitive in the original reference cited. Even a substantial increase over that cost would place it in a very economically competitive position with alternatives being considered. This rationale for eliminating it from consideration seems difficult to justify.
13.28	Page W 2-7	Section 2.3.3, the word 'only' seems out of place in the first sentence.
13.29	Page W 3-46	The narrative on the left hand column of this page refers to the previously mentioned 2,480 acre-feet. We have the same question regarding the source and accounting of this water.
13.30 Cont.	Page W 3-74 and W 3-75	In Section 3.4.6.4, the narrative refers to construction of a 36-inch pipeline adjacent to the old Highway 40 alignment below Jordanelle Dam. The narrative states that the pipeline would be located on the east side of the highway alignment. However, Map 3-7 shows the pipeline on the west side of the highway and that the highway makes a bend to the east. This would result in a

13.22 The 2,480 acre-feet listed in Table 1-13 is described in Section 3.2.6.3.6.2 on page W 3-46. Approximately 1,920 acre-feet of this amount would offset irrigation water belonging to irrigation companies that divert water from Spring Creek and used in the North Fields under baseline conditions, but would be rerouted through the Wasatch Canal to other irrigation companies under the Proposed Action. It was computed by subtracting the estimated amount of water associated with the water rights of North Fields from the measured historical diversions to the North Fields area.

The remaining 560 acre-feet is the computed decrease in groundwater recharge that would be associated with the conversion of the land east, and uphill of, the North Fields to sprinkler irrigation. It was computed by subtracting the estimated Proposed Action unconsumed irrigation water on the uphill lands from the estimated existing unconsumed irrigation water on these lands.

The source of water for the 2,480 acre-feet is reduced irrigation water deliveries to other irrigation companies participating in the Proposed Action. This water is not included in the amount of net conserved water stated in the EIS.

The 3,670 acre-feet of conserved water shown in Table 1-13 is the amount of conserved water delivered through the facilities associated with the Proposed Action. It was computed by taking the target supplemental instream flows shown in Table 1-12 and subtracting (on a monthly basis) the estimated existing flows in the streams shown in Table 3-5 of the Water Resources Technical Report and further subtracting the amount of excess flow in the Provo River (shown in Table 1-13) that could be bypassed through the local streams and back into the river. The resulting computed demand for conserved water was then compared with the available conserved water supply.

Conserved water is the change in irrigation water diversions caused by the Proposed Action, less any water delivered to avoid impacts under the Proposed Action. Conserved water was computed by subtracting and totaling the monthly irrigation diversions of each irrigation company under the Proposed Action from baseline diversions. The amount of water that would be used to maintain agricultural wetlands in the North Fields was subtracted from the previous total.

These conserved amounts are summarized by irrigation company in Table 4-35 of the Water Resources Technical Report.

13.23 As indicated in Section 1.13.8 of the DEIS (page W 1-76), this alternative was considered and eliminated from detailed analysis. Please see the Errata Summary for changes to page W 1-76 in Section 1.13.8.

13.24 The restored Strawberry River flows of 2,900 acre-feet per year would be in addition to the minimum stream flows required under the Instream Flow Agreement and may be released out of Strawberry Reservoir or exchanged through the Strawberry Aqueduct Collection System to other stream systems in the Uinta Basin.

13.25 Please see the Errata Summary for changes to Section 1.13.10 on page W 1-77.

13.26 Please see the Errata Summary for changes to Section 1.13.11 on page W 1-77.

13.27 Although cost was mentioned in this section, it was not cited as a criterion for eliminating this alternative.

13.28 Please see the revised comparative analysis in the final EIS.

13.29 Please see the response to Comment 13.22.

13.30 Cont. direct impact to Reclamation's Jordanelle Wetland Project on the west side of the highway. We believe that Map 3-7 is not accurate. The highway alignment parallels the proposed pipeline alignment. We suggest that the map be revised to accurately show the proposed location of the pipeline and the highway alignment.

13.31

Page W 4-1	Section 4.2.2, pages W 4-2 and W4-3 were missing from some review documents.
Page W 4-5	Section 4.3.1.11, pages W4-6 and W4-7 were missing from some review documents.

Thank you for the opportunity to review and comment on the document. You may direct questions regarding these comments to Dan Fritz at 801-379-1150 at the Provo Area Office.

Sincerely,

David G Frandsen
ACTING FOR Bruce C. Barrett
Area Manager

cc: Mr. Mike Weland
Utah Reclamation Mitigation
and Conservation Commission
111 East Broadway, No. 310
Salt Lake City UT 84111

13.30 The pipeline alignment is shown correctly on Map 3-7. The impacts are described correctly in the EIS. These impacted wetlands were measured in the field and are located along the east side of the existing old Highway 40 that provides access to Jordanelle Dam. The old Highway 40 is shown incorrectly on the base for Map 3-7. The highway shown on the base map is the original Highway 40 abandoned years ago. The existing old Highway 40 parallels the pipeline alignment. Please see the Errata Summary for page W 3-110.

13.31 Thank you for your comment identifying that some of the documents had some missing pages.

Comment Letter No. 14

WASATCH COUNTY
STATE OF UTAH

25 North Main • Heber City, Utah 84032 • Phone (801) 654 -3211

BOARD OF COUNTY COMMISSIONERS

KEITH D. JACOBSON T. LAREN PROVOST SHARRON J. WINTERTON

August 7, 1996

Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

RE: Draft EIS for the Wasatch County Water Efficiency Project and the Daniel Replacement Pipeline Project in Wasatch County.

Dear Ms. Ricks:

As County Commissioners, we are charged with the duty and obligation to promote the best interests of the citizens of Wasatch County. As you are aware, Wasatch County has a long, rich history of agriculture and the County's culture and society has largely been tied to the land up until the last ten or twenty years. The valley was settled for agricultural purposes in the mid 1800's and irrigation projects to support that agriculture began soon after. For example, the Strawberry Diversion of the Daniel Irrigation Company dates back more than 100 years.

Given that heritage, we believe it is in the best interests of the Wasatch County residents, past, current and future, to preserve and promote agricultural pursuits here in Wasatch County. We understand that the County will never again rely as heavily on agricultural practices as has been done in the past. Nevertheless, we will all be a great deal poorer if we allow that custom and culture to disappear into a "bedroom community" for the Wasatch Front.

We have carefully studied the draft environmental impact statement regarding the Wasatch County Water Efficiency Project and the Daniel Replacement Pipeline Project. We have worked closely with the Water Service Area, which we formed, in part, to deal directly with the District on this project. We have attended meeting after meeting in which the details of these two projects were discussed. Through that process, we have come to understand that the Efficiency Project and the Daniel Replacement Project will be beneficial to the citizenry of Wasatch County, if the Projects are completed in a proper and timely fashion.

14.1 We support the Wasatch County Water Efficiency Project and Daniel Replacement Pipeline Project. We remain concerned about the costs of this project to Wasatch County, the addition of federal ownership of canals and other waterworks, the impact of the DRP on the Daniel Canyon fishery, and many other portions of the project and look forward to working closely with you to

CLERK AUDITOR	RECORDER SURVEYOR	SHERIFF	ASSESSOR	TREASURER	ATTORNEY	JUSTICE COURT JUDGE
BRENT R. TITCOMB	ELIZABETH M. PARCELL	MIKE SPANOS	GLEN C. BURGENER	KAROLYN KIRKHAM	DAN H. MATTHEWS	BLAIN HYLTON

Responses to Comment Letter No. 14

14.1 Thank you for your comments and input. They will be considered during the decision-making process.

solve these and other issues in a manner that will be beneficial to Wasatch County.

Sincerely,

WASATCH COUNTY COMMISSION

T L Provost
T. LaRen Provost, Chairman

Keith Jacob
Keith Jacobsen, Commissioner

Sharon J Winterton
Sharron Winterton, Commissioner

/dhm

cc: Wasatch County Water Service Area Board

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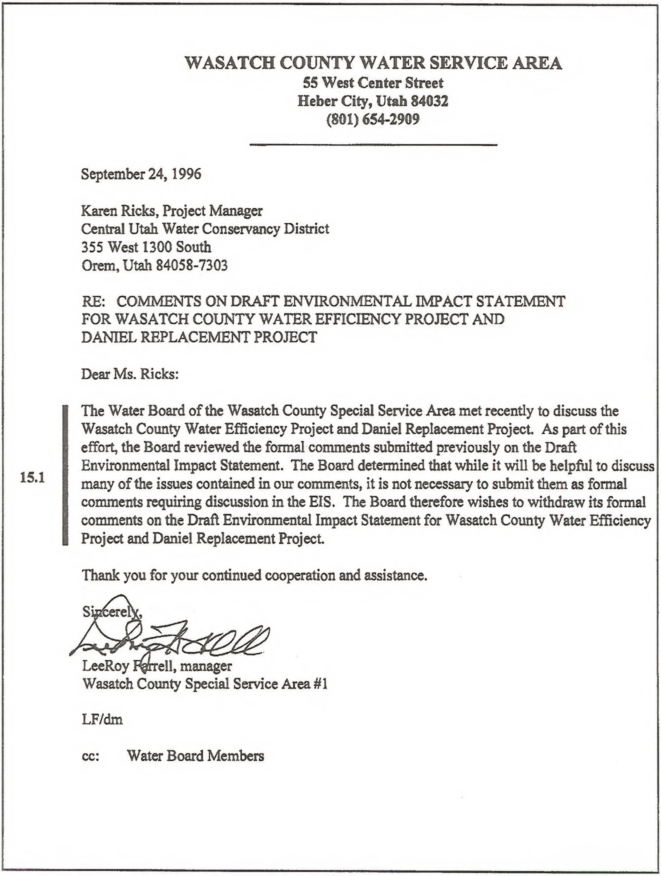
Comment Letter No. 15



WASATCH COUNTY WATER SERVICE AREA
55 West Center Street
Heber City, Utah 84032
(801) 654-2909

September 24, 1996

Karen Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

RE: COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR WASATCH COUNTY WATER EFFICIENCY PROJECT AND DANIEL REPLACEMENT PROJECT

Dear Ms. Ricks:

15.1 The Water Board of the Wasatch County Special Service Area met recently to discuss the Wasatch County Water Efficiency Project and Daniel Replacement Project. As part of this effort, the Board reviewed the formal comments submitted previously on the Draft Environmental Impact Statement. The Board determined that while it will be helpful to discuss many of the issues contained in our comments, it is not necessary to submit them as formal comments requiring discussion in the EIS. The Board therefore wishes to withdraw its formal comments on the Draft Environmental Impact Statement for Wasatch County Water Efficiency Project and Daniel Replacement Project.

Thank you for your continued cooperation and assistance.

Sincerely,

LeeRoy Farrell, manager
Wasatch County Special Service Area #1

LF/dm

cc: Water Board Members

Responses to Comment Letter No. 15

15.1 Thank you for your comment and ongoing close coordination with the CUWCD, Mitigation Commission and Department of the Interior.

Comment Letter No. 16

Utah Council, Trout Unlimited
Paul F. Dremann
2348 Lynwood Dr.
S.L.C. UT 84109
August 12, 1996

Ms. Karen M. Ricks
Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem UT 84058-7303

Re: Draft Environmental Impact Statement
Wasatch County Water Efficiency Project/Daniel Replacement Project (WCWEP/DRP)

Dear Ms. Ricks:

Thank you for the opportunity to review and comment on the referenced Draft Environmental Impact Statement (DEIS).

The Utah Council, Trout Unlimited has reviewed the DEIS and submits the following general and specific comments.

GENERAL COMMENTS

16.1 The DEIS contains numerous references to enhanced fisheries benefits resulting from supplemental flows in several of the Heber Valley streams and ditches. Public access to the referenced streams and stream habitat improvement, are requisites to these 'enhanced benefits'. Without these requisites the benefits aren't there. In addition, the value of these streams/ditches as spawning habitat has never been evaluated. In fact, Snake Creek, a major tributary to the Provo River was specifically withdrawn as a candidate for enhanced Flows.

16.2 Assuming satisfactory habitat enhancement and public access is accomplished, the West Side Ditch should be re-evaluated. Somehow this stretch of water was not adequately evaluated. The West Side Ditch appears to have more fisheries potential than either the London or Creamery Ditches.

Responses to Comment Letter No. 16

16.1 As indicated in Section 1.8.5 (page W 1-44) of the DEIS, the supplemental flows in the Heber Valley streams that are included in the Proposed Action are considered an aquatic habitat enhancement measure. As indicated in Section S.3.2.9 (page W S-7, Section 3.16.6.3.1, page W 3-160) of the DEIS, the Proposed Action would not provide public access to enhanced Heber Valley streams and anglers wishing to fish these streams would need to receive permission from the landowner. Neither the recreation analysis or socioeconomic analysis of the DEIS ascribes any credit to the project for fishery benefits in the Heber Valley streams.

Game fish spawning areas in Heber Valley streams were evaluated in the context of proposed instream construction. See Section 3.5.6.3.1.1, page W 3-86 of the DEIS.

As indicated in Section 1.13.1 (page W 1-74) of the DEIS, Snake Creek was identified as a stream to receive supplemental instream flows by the Instream Flow Work Group of the Fisheries Technical Advisory Committee. At a later date, Snake Creek was eliminated from this list of streams when the WCWEP With Pipelines Alternative, which included the west side of Heber Valley, was eliminated as an alternative.

16.2 Supplemental instream flows would be provided by the Proposed Action as described in the Draft EIS, Section 1.8.5 on pages W 1-41, W 1-44 and W 1-45. The supplemental instream flows would provide habitat for trout and other aquatic resources. As stated on page W 1-44, no other aquatic habitat enhancement measures are included in the Proposed Action. Therefore, the assumption of satisfactory habitat enhancement included in the comment is inconsistent with the Proposed Action as described. The Proposed Action would not provide public access to streams receiving supplemental instream flows. Therefore, the assumption of public access included in the comment is inconsistent with the Proposed Action as described.

The Fishery Technical Committee and the Instream Flow Work Group did consider including the Westside Ditch as one of the streams to receive supplemental in stream flows. The selected streams were incorporated into the Proposed Action to meet several purposes defined in Chapter 1, Section 1.2.2, on page W 1-2. Westside Ditch was not one of the streams originally under consideration when the Instream Flow Work Group (IFWG) was established. The nomination of Westside Ditch was made during the IFWG evaluation process at a point when it had been determined that there was insufficient water available to provide supplemental flows to all Heber Valley streams and ditches, and a prioritization process was initiated. The IFWG determined that providing flow to Spring Creek via Rock Creek was more appropriate for the Proposed Action. The Westside Ditch was not further evaluated by the IFWG for the following reasons:

- The Westside Ditch is a private irrigation ditch and is operated and maintained as an irrigation ditch. It delivers water to portions of the North Fields area for flood irrigation. Other streams considered and carried forward in the supplemental instream flow evaluation have natural stream characteristics (Spring Creek, London Ditch, Creamery Ditch, lower Lake Creek) or would be required to deliver water to Spring Creek (Rock Ditch). There are many other natural streams and irrigation ditches in Heber Valley that were considered for receiving supplemental instream flows. However, the selected streams were determined by the Instream Flow Work Group to have the best opportunities for improving fish habitat and increasing fish populations from providing supplemental instream flows.

- During the Instream Flow Work Group screening process, the Utah Division of Wildlife Resources and others expressed a desire to not supplement flows of "dead-end" drainages. A new outlet for Westside Ditch would need to be constructed to return flows to the Provo River. The Rock Ditch/Spring Creek system required no new watercourses to be constructed.

- Providing supplemental instream flow to Westside Ditch would require reconstruction of three additional flow splitting structures, which would increase the construction cost and

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increase the difficulty of operation, especially during freezing conditions. Construction cost and operational difficulty were criteria considered by the Instream Flow Work Group in selecting streams to receive supplemental instream flows.

- CUWCD would have little or no control over management of Westside Ditch because it is situated in the North Fields area, which would not be included in the WCWEP. There would be no changes in operation or management of the Westside Ditch under the Proposed Action. Existing private water rights dictate management of irrigation flows in Westside Ditch.

The Westside Ditch was not identified in the study plan for aquatic resources field work and was not surveyed. Section 4.3.1.5 on pages W 4-3 and W 4-4 of the Draft EIS states that the Fishery Technical Committee first met on March 3, 1992 to develop a field work plan for Heber Valley streams. Additional meetings were held on March 31, May 6, May 27, and June 2, 1992 prior to conducting the aquatic resources field work. The agencies, organizations and technical experts consulted as listed in Section 4.3.1.5 did not include the Westside Ditch in the study plan for aquatic resources field work.

Consultation and coordination regarding supplemental instream flows were conducted as described in Chapter 4, Section 4.3.1.5 on pages W 4-3 and W 4-4 and Section 4.3.1.6 on page W 4-4. All of the agencies and organizations listed in these sections were consulted and their representatives participated in formulation of this element of the Proposed Action. The Fishery Technical Advisory Committee accepted the recommendations of the Instream Flow Work Group, with minor changes to several terms, at the meeting held on May 26, 1994. These recommendations were incorporated into the Proposed Action for analysis in the EIS.

16.3 If supplementing the flows in the London Ditch, Creamery Ditch, and Lower Lake Creek are of primary value in replacing ground water lost as a result of conversion to sprinkler irrigation, that should be so stated.

16.4 The Proposed Action tightly interconnects the WCWEP and DRP. So tightly, that the long time CUP mitigation objective of re-watering the Upper Strawberry River will not happen if Congress does not authorize funding of the WCWEP. A more likely scenario may be the placing of a higher near-term priority on another water project such as the Spanish Fork-Nephi Project. The WCWEP would then be delayed, pushing implementation of the DRP further into the future. This is not acceptable. Section 303 (b) (1) of the Central Utah Project Completion Act (CUPCA) states: "The District shall acquire, on an expedited basis with funds to be provided by the Commission .... all of the Strawberry basin water rights being diverted to the Heber Valley through the Daniels Creek Drainage....." The DRP must be accomplished expeditiously. Therefore the Final Environmental Impact Statement (FEIS) must provide for the condition wherein the DRP can proceed even if the WCWEP is delayed.

16.5 The Proposed Alternative does not clearly describe which project facilities are associated specifically with the WCWEP and which with the DRP. The WCWEP and DRP are to be funded from different sections of the CUP Completion Act. Without this delineation, how will the project construction costs be accounted for? How will the Mitigation Commission monitor the status, progress, and costs of the DRP?

16.6 Trout Unlimited made a prior request that there be a DRP alternative of eliminating the Daniel Irrigation Company transbasin diversion without the construction of the Jordanelle-Daniel conveyance facility. One option suggested was the acquisition of water rights in the Strawberry Reservoir and bringing that water down Daniels Canyon. In light of the current projected costs of the stand alone alternatives, such an alternative appears to be financially and operationally practical.

16.7 The DEIS did not specifically include rehabilitation of the Upper Strawberry River as being a part of the DRP. All aspects of re-watering the Strawberry should be included in the FEIS. The fact that the canal/land rehabilitation is a Forest Service responsibility does not eliminate the need to integrate all aspects of the river rehabilitation.

16.3 In Section 3.2.6.3.6.2 (page W 3-41 through W 3-46) of the DEIS, it indicates that supplemental flows and its associated seepage and channel losses are utilized to avoid wetland impacts. However, the primary value of supplementing flows in London Ditch, Creamery Ditch and Lower Lake Creek is to improve habitat for trout and other aquatic resources. Some incidental groundwater recharge would occur along these streams and ditches as well as along Rock Ditch and Spring Creek, however, replacement of groundwater lost as a result of conversion to sprinkler irrigation is not the primary value of providing supplemental instream flows to some Heber Valley streams.

16.4 Section 303(b)(4)(D) of CUPCA indicated that: "funds provided for the Daniels Creek replacement pipeline may be expended so as to integrate such pipeline with the Wasatch County conservation measures provided for in Section 207(e)(2) and the Wasatch County Water Efficiency Project authorized in Section 202(a)(3)." In accordance with this section of CUPCA, an integrated project has been planned as the Proposed Action (see Section 1.1, 1.2.1 and 1.3.2 of the DEIS). The joint lead agencies plan to complete the NEPA compliance process and terminate the upper Strawberry River/Daniels Creek diversions as quickly as possible. The DEIS also contains two other alternatives that provide for the condition wherein the DRP can proceed without the WCWEP.

16.5 Since this is an integrated project, implementation of the Proposed Action will utilize funds authorized in Sections 202, 207 and 303 of CUPCA. Additional information regarding facilities and the use of funds authorized by CUPCA is contained in the WCWEP Feasibility Study that is available upon request.

16.6 As indicated in Section 1.13.8 (page W 1-76 and W 1-77) of the DEIS, this alternative was considered and eliminated from detailed analysis. Please see the Errata Summary for changes to Section 1.13.8 on pages W 1-76 and W 1-77.

16.7 Section 1.8.7 on page W 1-49 specifically describes the rehabilitation of the upper Strawberry River and diversion facilities that is included in the Proposed Action and DRP alternatives. Any additional rehabilitation of the upper Strawberry River is authorized in Sections 307(3), 307(8) and 315 of CUPCA at the option of the Mitigation Commission.

The DEIS was not intended to describe and analyze impacts of additional rehabilitation of the upper Strawberry River. Chapter 1, Section 1.2.1 on page W 1-2 of the DEIS clearly states the need for the Proposed Action and alternatives: To restore the flows in the upper Strawberry River that have been diverted by the Daniel Irrigation Company. All aspects of restoring flows to the upper Strawberry River and its tributary streams have been considered in formulating the Proposed Action and DRP alternatives. The Proposed Action and DRP alternatives also meet a purpose defined in the sixth bullet item in Chapter 1, Section 1.2.2 on page W 1-2. See Chapter 1, Section 1.3.2, last paragraph, on page W 1-4 for a summary description of the Proposed Action that meets the specific need and purpose of the project related to the upper Strawberry River basin. The Daniel Replacement Project With Pipeline Alternative, described in Chapter 1, Section 1.3.3, and the Daniel Replacement Project With Canal Alternative, described in Chapter 1, Section 1.3.4, incorporate by reference the description of activities in the upper Strawberry River basin for the Proposed Action presented in Chapter 1, Section 1.8.7. See Chapter 1, Section 1.8.7 on pages W 1-49 through W 1-52 for a detailed description of the Proposed Action that meets the specific need and purpose of the project related to the upper Strawberry River basin. Chapter 1, Section 1.9.5 on page W 1-54 incorporates by reference the detailed description of restoring stream flows in the upper Strawberry River basin under the Proposed Action into the Daniel Replacement Project With Pipeline Alternative. Chapter 1, Section 1.10.6 on page W 1-56 incorporates by reference the detailed description of restoring stream flows in the upper Strawberry River basin under the Proposed Action into the Daniel Replacement Project With Canal Alternative. The impacts of restoring flows in the upper Strawberry river basin have been analyzed in Chapter 3. Examples of these impact analyses are presented in Chapter 3, Section 3.2.6.3.2 on pages W 3-32 through W 3-35 for water resources, and Section 3.5.6.3.1.1 on page W 3-87, Section 3.5.6.3.1.2 on pages W 3-89 and W 3-90, and Section 3.5.6.3.2.2 on pages W 3-90 and W 3-91 for aquatic resources.

16.8 Water rights/use data show that the Daniels Irrigation Company (DIC) diverted an average of 1825 acre-feet per year since conversion to sprinklers in 1980. It is expected that the DIC diversions are expected to average approximately 2,200 acre-feet per year over the long-term if the DRP is not built and the transbasin diversions continue. CUPCA Section 303(b)(3)(C) refers to water replacement costs not 'exceeding the cost of existing water deliveries (including operation and maintenance)'. In spite of the current/actual water use patterns, the DEIS states that an average of 2,900 acre-feet of water per year would flow through the Canal and the Pipeline facilities. The 2,900 acre-feet is the annual, average long term diversion for the entire period (1950-1991). State law allows for adjudication of water rights to reflect current, actual use. The 700 acre-feet increase over actual, current requirements, will have a significant impact the water conveyance costs of the canal and pipeline. This issue should be resolved before finalizing the EIS.

SPECIFIC COMMENTS

16.9 S.2.1 Water Resources/S.2.4 Agriculture
It is not clear how the DRP would increase shortages of agricultural water supplies in the valley. This assumption seems to be based on the premise that the WCWEP is the only source of water for the DRP. In fact, the DEIS may be incomplete in that no other sources of water for the DRP were evaluated.

16.10 S.3.2.1 Water Resources
This section states that, following elimination of the DIC diversions, an additional 2900 acre-feet would be available to the Strawberry River and its tributaries during the irrigation season. There were comments made during tours of the diversion facilities to the effect that there is approximately a 40% water loss from the head of McGuire Draw to the mouth of Daniels Canyon. Based on this water loss, the DIC would take delivery on 1800 acre-feet (60% of 2900 acre-feet), not the 2900 acre-feet specified in the DEIS.

1.8.5 Supplemental Instream Flows
This section states that 'supplemental flows' would be available most of the time. Such a vague commitment does little to support the concept of habitat enhancement.

16.8 As indicated in Section 1.2.1 (page W 1-2) of the DEIS, DIC has diverted water continuously from the upper Strawberry River basin since the 1870's. The Timpanogos Canal and the DRP pipeline were sized for peak usage of 27 cfs. A 700 acre-feet reduction in annual diversion would have no effect on the canal and pipeline sizing to meet a peak demand.

16.9 As indicated in Section 1.3.3 and 1.3.4 (page W 1-5), the replacement supply for the DRP alternatives would be CUP agricultural water stored in Jordanelle Reservoir. Since the CUP supply allocated to the Heber Valley and Francis area is a fixed amount, providing 2900 acre-feet to DIC would reduce the available CUP agricultural supply resulting in an increase in agricultural shortages in Heber Valley compared to baseline conditions. Alternative water sources for the DRP were assessed in the following sections of the Draft EIS: Section 1.13.8 on page W 1-76 and Sections 1.13.10 and 1.13.11 on page W 1-77.

16.10 Measurements of flows at several locations in the Daniels Creek watershed have shown no measurable loss of water from the basin divide (where the 2,900 acre-feet is measured) to the mouth of Daniels Canyon. Additional information is provided in Section 3.2.5.4.1.1 of the Draft EIS on page W 3-17, and in Section 3.2.7.2 of the Water Resources Technical Report. The comment regarding a large loss factor of 40% may be associated with a statement that was made during the tour referenced by the comment that losses from Willow Ditch, which conveys water towards the upper Strawberry River basin divide, has a high loss factor.

16.11 1.8.7 Removal of the Diversion Facilities
This Section states that the Forest Service "developed the abandonment and removal plan by soliciting input from the public and other agencies....". Nowhere is there any description as to who the 'public' and 'other agencies' were.

16.12 1.8..7.9 Pipeline Construction and Livestock Watering
We are not aware of any NEPA analysis supporting pipeline construction or livestock watering as a part of the Strawberry fisheries mitigation effort. Also, was there any public discussion of or comment on these proposed facilities?
Wildlife are capable of locating sources of water and do not require supplemental watering troughs. Protection of the Strawberry River riparian habitat involves many issues, including the management of recreational use and livestock grazing. Section 1.8.7 had general references to road closures but no reference to grazing impacts or potential grazing management changes.

16.13 3.11.6.2 Potential Impacts Eliminated from Further Analysis
The statement was made that the total amount of water used for municipal and industrial uses approximates the total use by agriculture. What is the basis for this statement? Are there any references that support it?

16.14 3.11.6.3.2 Livestock Watering and Production
The statement was made that the Supplemental Flows in Heber Valley Streams would have a beneficial impact on livestock watering along these streams since flows would be available longer. Without off-stream water sites, this extended livestock watering season could have an extremely detrimental effect on the riparian habitat.

16.15 3.16.6.3.1 Impacts on Recreation Use
The stated 244% increase in trout biomass over the baseline is not a significant number. As this Section states, an increase in angler days would not be significant as angler access is not being provided under WCWEP.

16.16 4.3.1.10 Upper Strawberry River Basin Consultation
Reference is made to meetings between representatives of the Forest Service and the Central Utah Water Conservancy District. The statement was also made that "modifications to the plan were discussed and environmental analysis reviewed." We are unaware of any such plan or any public involvement in the process.

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16.11 Please see the Errata Summary for additions to Chapter 4, Section 4.3.1.10, page W 4-5 on consultation and information on public and agency input conducted by the Forest Service regarding abandonment and removal of Daniel Irrigation Company diversion facilities in the upper Strawberry River basin.

16.12 As indicated in Section 1.8.7.9 on page W 1-52 and Section 3.2.6.3.2 on page W 3-32 of the DEIS. Pipeline construction and livestock watering in the upper Strawberry River basin are elements of the Proposed Action and DRP alternatives analyzed in the WCWEP and DRP DEIS. These elements were formulated as part of the Proposed Action and alternatives to help avoid and minimize impacts on existing environmental resources. The existing environmental resources include livestock grazing on public lands in the Uinta National Forest, which occurs under permits granted by the Forest Service. This EIS includes the NEPA analysis on the pipeline construction and livestock watering elements of the Proposed Action and DRP alternatives. Section 3.11.6.3.2 of the DEIS on page W 3-128 includes an assessment of the potential impacts of the abandonment and removal of DIC diversion facilities on livestock watering, grazing patterns and production. The DEIS public hearings and 60-day public comment period provided the opportunity for public comment on these elements.

Protection of Strawberry River riparian habitat and grazing management alternatives have not been evaluated in this EIS because they are outside the scope of the EIS and they were previously analyzed in the Final Environmental Impact Statement, Strawberry Valley Management Area, prepared by the Forest Service and filed on August 1, 1990. The Record of Decision for the Strawberry Valley Management Area FEIS selected and adopted an alternative that emphasizes Watershed/Fisheries/Wildlife resources. The Forest Service's selected alternative addresses protection of Strawberry River riparian habitat and management of recreational use and livestock grazing.

16.13 Please see the Errata Summary for changes to Section 3.11.6.2 page W 3-123.

16.14 As indicated in Section 3.4.6.3.1 (page W 3-73) of the DEIS, livestock grazing practices would not be changed as a result of the Proposed Action. Any increase in vegetation from increased flows would be grazed as is now the practice.

16.15 As indicated in Section 3.16.6.3.1 (page W 3-160) of the DEIS, the potential increase in the number of angler days actually realized would not be significant because public access would not be provided.

16.16 Please see the response to Comment 16.11.

16.17 3.19.3 Aquatic Resources
This section stated that the loss of naturally reproducing cutthroat trout in upper Daniels Creek was unmitigable (within the WCWEP area). There may be opportunities to accomplish this mitigation outside the project area. We recommend that this opportunity be pursued.

Thank you for your consideration of this letter and for its inclusion in your review process.

Sincerely,

Paul Dremann

Paul F. Dremann
Vice President, Conservation
Utah Council, Trout Unlimited

16.17 The comment is correct in stating that the adverse impacts on naturally producing trout in upper Daniels Creek are mitigable. The statement in the Draft EIS has been corrected (please see the Errata Summary for changes to Section 3.19.3 on page W 3-171). The adverse impacts of the Proposed Action on naturally producing trout in upper Daniels Creek from the Proposed Action would be mitigated as part of the Proposed Action. The Mitigation Commission will be a signator to the Conservation Agreements for Colorado River and Bonneville cutthroat trout. CUWCD will work with the Mitigation Commission as it participates in the conservation strategies to implement suitable mitigation for this impact, within the Provo River drainage if possible.

Increases in aquatic resource habitat in the upper Strawberry River basin is mitigation for impacts of the Strawberry Aqueduct and Collection System and therefore cannot compensate for adverse impacts in other portions of the impact area of influence.

Please see the Errata Summary for changes to Note [a] in Table 3-33 on page W 3-88 and Table 3-34 on page W 3-93.

The impacts of the DRP alternatives on naturally producing cutthroat trout in upper Daniels Creek would be significant. The CUWCD and Mitigation Commission would investigate mitigation opportunities in cooperation with the Division of Wildlife Resources and FWS, for cutthroat trout within the Provo River drainage if either DRP alternative were selected for implementation. Please see the Errata Summary for changes to Section 3.5.6.4.1.2 on page W 3-92 and Section 3.5.6.4.4 on page W 3-92.

PROVO RIVER WATER USERS ASSOCIATION
DEER CREEK PROJECT
1788 North State Street
Orem, Utah 84057

Tel (801) 222-0710
Fax (801) 222-0724

August 13, 1996

VIA FAX AND REGULAR MAIL

Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

Re: Draft Environmental Impact Statements
Wasatch County Water Efficiency Project
and Daniel Replacement Project - June 1996

Dear Ms. Ricks:

The Provo River Water Users Association ("PRWUA") respectfully submits the following comments to the Draft Environmental Impact Statement ("DEIS") covering the Wasatch County Water Efficiency Project ("WCWEP") and Daniel Replacement Project ("DRP"), both dated June 1996.

PRWUA is a Utah nonprofit corporation organized in 1935 for the purpose of providing a supplemental water supply to its shareholders comprising six metropolitan water districts, one conservation district, seven mutual irrigation companies and two small farming companies. To that end, PRWUA contracted with the United States Bureau of Reclamation ("Reclamation") for the construction of the Deer Creek Division of the Provo River Project (the "Project") and for the repayment by PRWUA of the Project construction costs. The Project includes, among other things, the Deer Creek Dam and Reservoir, the enlarged Provo Reservoir Canal, the enlarged Weber-Provo Diversion Canal, the Duchesne Tunnel and the Provo River Channel Revision. The care, operation and maintenance of the Project facilities have been transferred to PRWUA by Reclamation in accordance with the respective repayment contracts. PRWUA is entitled to use the storage capacity of Deer Creek Reservoir, together with the total yield of storage water therefrom and a permanent right to the exclusive use of the water made available by the Project under the water rights therefor standing in the name of Reclamation.

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Rights to the use of the waters of the Provo River were adjudicated by the Decree of the District Court of Utah County dated May 2, 1921, made and entered in that certain action entitled Provo Reservoir Company v. Provo City, et al., being Civil No. 2888 ("Provo River Decree"). Subsequent to the entry of the Provo River Decree numerous water rights were established under Utah law through the issuance of Certificates of Appropriation by the Utah State Engineer, including the Project water rights issued in the name of Reclamation which include, among others:

> Water Right Nos. 55-7060 (a1902) and 55-7061 (a1903) covering the right to store 3,400 acre-feet ("AF") at a rate of 9.33 cubic feet per second ("cfs") annually of Provo River water in Deer Creek Reservoir during the irrigation season.
>
> Water Right No. 55-295 (A16642) covering the right to store 100,000 AF annually of Provo River water in Deer Creek Reservoir during the entire year.
>
> Water Right No. 55-262 (A12144) covering the right to store 17,410 AF of Provo River water in Deer Creek Reservoir annually by exchange during the following year for return flows of Project foreign water stored in Utah Lake.
>
> Water Right No. 35-8737 (A9569) covering the right to divert 136,500 AF of water at a rate of 1,000 cfs annually from the Weber River for storage in Deer Creek Reservoir during the entire year.
>
> Water Right No. 35-8756 (A12141) covering the right to divert 37,200 AF of Weber River water annually at a rate of 1,000 cfs for storage in Utah Lake and storage of like quantities of Provo River water in Deer Creek Reservoir by exchange during the following year.
>
> Water Right Nos. 43-341 (A12230) and 43-343 (A12229) covering the collective diversions of 55,000 AF of Duchesne River waters at a combined rate of 600 cfs for storage in Deer Creek Reservoir during the entire year.

It should be noted that in addition to the above, the water rights for the Bonneville Unit of the Central Utah Project ("BU") for the storage of Provo River water are evidenced primarily by approved Water Right Nos. 55-4494 (A40523) and E398 (55 AREA) standing in the name of Reclamation and covering the storage of 300,000 AF annually of Provo River water in Jordanelle Reservoir and Deer Creek Reservoir during the entire year. The apportionment and distribution of the waters of the Provo River between the Project and BU are governed by the Deer Creek Reservoir/Jordanelle Reservoir Operating Agreement dated November 1, 1994 (the "Operating

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Agreement"), among the United States of America, PRWUA and the Central Utah Water Conservancy District ("CUWCD").

The Operating Agreement requires CUWCD to provide from BU water the Provo River minimum stream flows required by the Central Utah Project Completion Act - Public Law 102-575 ("CUPCA") and no Provo River Project water will be required to satisfy any of those minimum stream flows (par. 21, p. 34, 35). The Operating Agreement further acknowledges that Reclamation has consulted with the U.S. Fish and Wildlife Service ("FWS") under Section 7 of the Endangered Species Act ("ESA") and FWS has rendered a Final Biological Opinion dated September 22, 1994, which includes a Reasonable and Prudent Alternative ("RPA") which Reclamation has agreed to implement in a manner consistent with the intended purposes of the Operating Agreement and consistent with Reclamation's legal authority and jurisdiction. Reclamation is responsible to ensure that funding proposals for implementing the RPA are presented to the Utah Reclamation Mitigation and Conservation Commission ("Commission") and to the extent that such funding is not so available, Reclamation is responsible therefor. (par. 34(c), p. 48). Insofar as such implementation does not interfere with or impair the contractual rights of PRWUA under its repayment contracts, PRWUA will not interfere with reasonable measures taken by federal and/or state entities to implement the necessary steps as reasonable and prudent alternatives in the biological opinions of the FWS after consultation. (par. 34, p. 50)

17.1 The purpose of the above is to ensure that CUWCD fully understands the nature, extent and complexity of the existing Project water rights, operating plans and agreements which might be impacted by the WCWEP and/or DRP. PRWUA trusts that CUWCD will give serious consideration to the above to avoid any adverse impacts to the Project operations and water rights which might result from the implementation of the WCWEP and/or DRP.

COMMENTS

It is an accepted fact that the Provo River Decree awarded liberal quantities of water in the Wasatch Division, Third District (Midway Upper Dam down to Wright Ranch); (par. 2, p. 12) to augment the base flow of the Provo River in the Provo Division for a longer period of time through return flows. To that end, the Wasatch Division First Class Rights in the Third District shall receive their whole quantity in that class before the rights in the Provo Division (par. 121, p. 73). That very concept as applicable to the Provo River was recognized by the Utah Supreme Court in the case of *Provo Bench Canal and Irrigation Co. v. Linke*, 5 Utah 2d 53, 296 P.2d 723 (1956), wherein on page 726 of the Pacific Reporter it was stated:

> . . . The first seasonal irrigation of upper valley lands along the side of a stream tends to reduce the amount of the flow of such stream in lower valleys but after the

Responses to Comment Letter No. 17

17.1 Each of the water rights, agreements, and institutional arrangements referenced in the comment letter were included in the Provo River Simulation Model, which was used to simulate the water resources impacts that might result from implementation of the Proposed Action or DRP. Please see Appendix B, Section B.2.1 on pages B-1 through B-4 for an explanation of how the water rights, agreements and institutional arrangements were incorporated into the model and the analysis. CUWCD has given consideration to the protection of water rights and Provo River Project operations. As stated in Section S.1.1 on page W S-1 and Section 1.2.2 on page W 1-2, the protection of downstream water users is one of the purposes of the project. The Draft EIS and Water Resources Technical Report show that the Proposed Action and DRP can be implemented without adverse impacts to downstream water users. Section 3.2.6.3.5 on page W 3-38 states that deliveries to downstream water users would not be impacted by the Proposed Action.

Impacts on downstream water users would be avoided by releasing water from storage in Jordanelle Reservoir when downstream water supplies would otherwise be adversely impacted from reductions in return flow caused by the Proposed Action or either DRP alternative. In the water resources modeling conducted for the EIS, water was automatically released from storage whenever downstream users would otherwise not be able to divert the same quantity of water as they did under baseline conditions. This is described in Section 1.4.2 of the Draft EIS on page W 1-9. A procedure would be developed during the water right change application process and implemented during actual project operations to avoid impacts on downstream water users. Additional information regarding this procedure is provided in Section 1.6.2 on page W 1-14 of the Draft EIS. Implementation of this procedure, and requests to release water from storage would be under the administrative control of the Provo River Water Commissioner.

> return flow from such irrigation again reaches the stream the amount of the stream in the lower valleys is increased by the amount of the return flow. The decrease in the flow of the stream in the lower valleys occurs early during the spring run-off when there is usually a surplus of water but the later increase from the return flow should continue throughout the season when there is usually a scarcity of water.

Section 202(a)(3)(A) of CUPCA clearly acknowledges the foregoing concept, since it requires that the planning and construction of the WCWEP be conducted without interfering with downstream water rights.

17.2 Section 1.6.1 of the DEIS (W 1-9) sets forth the basic premise of WCWEP that irrigation efficiency improvements instituted as part of the project would conserve direct-flow diversions, which could then be stored in Jordanelle. That basic premise is seriously flawed since there will be no net savings of water to the Provo River System in Heber Valley but in fact there will be an average annual depletion of 2,900 acre-feet in the irrigation of 1,800 acres of Daniels Irrigation Co. ("DIC") lands. These so-called conserved diversions would be released later to provide a supply of water to replace discontinued transbasin diversions to DIC, to supplement the flow of Heber Valley streams, and to mitigate the effects of changes in Heber Valley return flows on downstream water users. It acknowledges that storage of the so-called conserved direct-flow rights and the releases and delivery of this water would require filing and approval of water right change applications with the state engineer, as well as agreements between CUWCD, the U.S. Department of the Interior and downstream water users (W 1-9). However, it is noted that no new water right or exchange applications would be filed in the Provo River watershed (W 3-8). PRWUA is advised that the irrigated acreage under the DIC is 1,800 acres and an annual average of 2,900 acre-feet of CUP water would be delivered to DIC through a pipeline (W 3-50) from Jordanelle Reservoir.

17.3 It is respectfully submitted that the use of the so-called conserved waters to provide a supply of water to replace discontinued transbasin diversions to DIC constitutes a new appropriation of water for which an application to appropriate water must be filed in the office of the Utah State Engineer in accordance with Utah Code Ann. § 73-3-3. Accordingly, there will be an enlargement of 1,800 acres in the acreage currently irrigated with the waters of the Provo River and a corresponding increase in use of 2,900 acre-feet. The fact of the matter is that there is no unappropriated water in the Provo River, which in fact is over appropriated. Likewise, the so-called conserved water has already been appropriated by downstream appropriators. Furthermore, as of November 15, 1995 the Utah Lake Drainage Basin, of which the Provo River Drainage is a part, was closed by the Utah State Engineer to new appropriations.

17.2 The comment has correctly stated a portion of the basic premise for operation of the Proposed Action. Water conserved by the Proposed Action would be stored in Jordanelle Reservoir for later release. However, the source of the DIC water supply after diversions from the upper Strawberry River basin are discontinued would be water conserved from the CUP agricultural supply of the Heber Valley. Non-CUP water conserved by the Proposed Action would not be used to supply water to DIC. The Errata Summary includes changes to Section 1.6.1 on page W 1-9 that are intended to clarify this issue. The Errata Summary also includes changes to Section 3.2.6.3.1, Table 3-10 to provide additional information regarding the types and amounts of water that would be conserved by the Proposed Action. Impacts on water users downstream of Deer Creek Reservoir would be avoided by the release of conserved water from Jordanelle Reservoir and by reducing the quantity of water lost from Heber Valley return flows. The reduction in water lost from Heber Valley return flows is explained in the Errata Summary for Section 3.2.6.3.1 on page W 3-28 of the Draft EIS.

17.3 The supply of water to replace discontinued transbasin diversions to DIC would come from water conserved from the CUP agricultural supply of the Heber Valley. The supply would not come from conserved non-CUP water. Therefore, this water supply would not constitute a new appropriation of water and would not require an appropriation application to the Utah State Engineer. There would be no net change in the delivery of CUP water and a decrease in the consumption of non-CUP water and therefore no new appropriation of water is needed. There would be no increase in acreage irrigated with non-CUP water from the Provo River, since the replacement water to DIC would be coming from water conserved from the CUP supply.

Please see the Errata Summary for changes to Section 1.6.1 on page W 1-9.

17.4 Realistically, the WCWEP will not save any water that is not currently being beneficially used. All of the waters of the Provo River, except those consumptively used in Heber Valley, are currently being beneficially used by the owners of vested downstream water rights. Those waters not consumptively used find their way into the underground basin and contribute to the Provo River by return flow, either directly into the river, or are intercepted by Deer Creek Dam, which is constructed in bedrock. Those return flow waters are considered Provo River natural flow waters and are apportioned to the downstream direct flow rights, both in quantity and timing. Accordingly, the WCWEP will not save or conserve water. Rather, the WCWEP combined with the DRP will consume more water to the detriment of the lower water users in violation of the mandate of Section 202(a)(3)(A) of CUPCA that the planning and construction of the WCWEP be conducted without interfering with downstream water rights.

PRWUA is entitled to the use of the Provo River Project waters evidenced by the above Water Right Nos. 55-7060 (a1902) and 55-7061 (a1903) covering the right to store 3,400 acre-feet ("AF") at a rate of 9.33 cubic feet per second ("cfs") annually of Provo River water in Deer Creek Reservoir during the irrigation season. The foregoing water rights were confirmed in two separate cases decided by the Supreme Court of Utah. *Provo Bench Canal and Irrigation Co. v. Linke*, 5 Utah 2d 53, 296 P.2d 723 (1956); *Orem City Corporation v. Tracy*, 7 Utah 2d 319, 324 P.2d 1011 (1958).

In *Linke* the United States acquired a maximum total water right of 52.492 cfs, which prior thereto had been used to irrigate the lands thereafter inundated by the Deer Creek Reservoir. The United States filed with the state engineer two applications to change the place of diversion and use of such waters to Salt Lake County and Utah County below the mouth of Provo Canyon. During the hearing of the protests of the lower water users before the state engineer and in the district court, the applications were reduced from 52.492 cfs to 9.33 cfs, which amount the district court found that under pre-reservoir conditions was consumed by evaporation and transportation of plant life without increasing or enhancing the amount of water available to the lower water users. The Utah Supreme Court concluded that the changes to the extent of 9.33 cfs previously consumptively used under pre-reservoir conditions could be made without impairing vested rights of others and ordered the change applications approved. In *Tracy* the Utah Supreme Court concluded that the same 9.33 cfs had already been appropriated and affirmed the rejection of the application filed by Orem City to appropriate the same. Both *Linke* and *Tracy* stand for the proposition that in the Provo River System only the consumptive use of the waters can be changed without impairing existing water rights. In those cases, the Provo River Project changes were limited to the consumptive uses (9.33 cfs) on the lands thereafter occupied by the Deer Creek Reservoir. The same principle applies to the WCWEP. Since there is no net savings of water but in fact a depletion of water, the WCWEP and the DRP both must fail.

17.4 Not all of the Heber Valley irrigation diversions are consumptively used by crops. While the use of water by crops is considered a beneficial use, a portion of the excess diversions (which has been conservatively estimated at 12 percent) is consumed by non-crop uses before reaching the Provo River or Deer Creek Reservoir. Please see the Errata Summary for changes to Section 3.2.6.3.1 on page W 3-28 and see Section 3.2 of this Final EIS for additional information and figures that show water distribution in Heber Valley. The detailed hydrological analysis conducted for the EIS indicates that these return flow losses can be conserved without interfering with downstream water users. The Proposed Action would consume less water than is consumed under baseline. The Proposed Action is not in violation of Section 202(a)(3)(A) of CUPCA because it has been shown that downstream water rights would not be affected. The methodology for the EIS water resource analysis is summarized in Appendix B, Section B.2.1 of the Draft EIS and described in detail in Chapter 2 of the Water Resources Technical Report. The results of the analysis are described in Section 3.2 of the Draft EIS and Chapters 3 and 4 of the Water Resources Technical Report. Additionally, it should be noted that the Provo River Water Users or any other downstream water user, do not have a right or application to divert return flow from the Strawberry transbasin diversions to DIC.

CONCLUSIONS

17.5 The WCWEP is a misnomer, since it will not conserve or save any Provo River water which is not currently being beneficially used by the downstream water users. In fact, the WCWEP combined with the DRP will consume an additional 2,900 acre-feet of Provo River waters to the detriment of the downstream water users and in direct violation of Section 202(a)(3)(A) of CUPCA which mandates that the planning and construction of WCWEP be conducted without interfering with downstream water rights. Utah State water law already prohibits such interference which will become abundantly clear at the administrative hearings before the Utah State Engineer upon the filing of the necessary applications to implement the WCWEP.

The primary purpose of WCWEP and DRP is to do away with the transbasin diversions from Hobble Creek in the upper Strawberry River drainage to provide additional water to enhance fish and wildlife objectives in the upper Strawberry River down to the enlarged Strawberry Reservoir. To do so requires replacement water to DIC from the Provo River. Bonneville Unit water might be available for that purpose, but not so-called conserved water, since there is none.

17.6 It is presumptuous for CUWCD to assume that it will control the releases of storage water from Jordanelle Reservoir to replace into the Provo River the current return flows both as to quantity and timing. The direct flow water users in the Provo Division should be up in arms over such proposal and rightfully so. After all, the Provo River Water Commissioner, acting under the direction of the Utah State Engineer, is charged with the responsibility of administering the waters of the Provo River. PRWUA would strongly oppose such control unless CUWCD guarantees to deliver 3,400 AF to Deer Creek Reservoir each year during the irrigation season with the same time frame which PRWUA currently receives such waters under Water Right Nos. 55-7060 (a1902) and 55-7061 (a1903).

17.7 Cont. It is respectfully submitted that the DEIS for both the WCWEP and the DRP are fatally defective and fall way short of compliance with the National Environment Policy Act of 1969 ("NEPA"). The DEIS wholly fails to explain how water will be saved or conserved on a river system basis as distinguished from an individual irrigation company basis. The DEIS wholly fails to quantify any savings on a river system basis or to provide any basic data to support its conclusions. Rather, the DEIS speaks in generalities and assumes that a savings will result from more efficient individual delivery systems. The DEIS wholly fails to explain that its purpose is not to benefit the water users in Heber Valley through increased efficiency, but rather to provide additional water to enhance fish and wildlife objectives in the upper Strawberry River down to the enlarged Strawberry Reservoir. The DEIS wholly ignores the basic principle established by *Linke* and *Tracy* that on the Provo River System, only the consumptive uses can be changed without

17.5 Please see the responses to Comments 17.1, 17.2, 17.3 and 17.4. The Proposed Action would not interfere with downstream water rights.

17.6 As described in Section 1.6.2 on page W 1-14 of the Draft EIS and Section 2.4.2 of the Water Resources Technical Report, the CUWCD does not intend to administratively control all releases of water from Jordanelle Reservoir. CUWCD will operate the outlet works at Jordanelle Dam, and will make releases of stored CUP water to meet the needs of CUP water users. However, non-CUP water and water required to replace Provo River return flows would not be under the administrative control of the CUWCD. The Provo River Water Commissioner will continue to be responsible for administering the waters of the Provo River, and would request that CUWCD make releases from Jordanelle Reservoir as necessary to avoid impacts on downstream water users from the Proposed Action or either DRP alternative.

17.7 The water resource analysis results documented in the Draft EIS, the errata included in this Final EIS and the Water Resources Technical Report defines how water would be conserved by decreasing the losses associated with return flows from excess irrigation diversions in the Heber Valley, and by conserving water from the CUP agricultural water supply of Heber Valley. The system-wide water balance shown in Figure 4-9 of the Water Resources Technical Report, and included in Section 3.2 of this Final EIS, quantifies these savings.

The Draft EIS does not assume that a significant savings would result from the storage and release of conserved direct flow diversions or from more efficient delivery systems. The Draft EIS describes how water would be more efficiently applied using these systems (please see Section 3.1.2.1.2 in the Draft EIS), and how potential downstream impacts from the terminated DIC transbasin water supply from Strawberry basin can be avoided by releases from Jordanelle Reservoir and by reducing the consumption of return flows in Heber Valley (please see Section 3.2.6.3.4 in the Draft EIS). The supply of water to DIC to replace the terminated transbasin diversions would come from water conserved from the CUP agricultural supply of the Heber Valley (please see the Errata Summary for changes to Section 1.6.1 on page W 1-9).

17.7 Cont. impairing downstream water rights. The DEIS wholly fails to explain that rather than conserving or saving water it will consume additional Provo River water to the detriment of the downstream water users. As such, the DEIS for both the WCWEP and the DRP are fatally defective and must be wholly restructured to address the concerns raised in these comments.

Respectfully submitted,

NPSefakis

N. P. Sefakis
President

NPS/JN/dwb
cc: Charles A. Calhoun, Regional Director
U.S. Bureau of Reclamation
Bruce C. Barrett, Area Manager
U.S. Bureau of Reclamation
Michael C. Weland, Executive Director
Utah Reclamation Mitigation and
Conservation Commission

The comment has mis-stated the purpose of the Proposed Action and DRP. The purposes of the Proposed Action and DRP are stated in Section S.1.1 on page W S-1 and Section 1.2.2 on page W 1-2 of the Draft EIS. The water resources analysis conducted for the Draft EIS, and the definition of how the Proposed Action and DRP alternatives would be operated, was in fact based on the principle that the water rights of downstream users must be protected.

Section 3.2.6.3.4 on page W 3-38 explains that less Provo River water would be consumed under the Proposed Action, which makes up for the depletion to the basin resulting from the termination of the transbasin diversion. The Errata Summary includes changes to Section 3.2.6.3.1 on page W 3-28, explaining that the Proposed Action would result in a 3,000 acre-feet annual reduction in consumption of Heber Valley return flows. This effectively would offset the 2,900 acre-feet annual reduction in water supply to the basin resulting from the termination of Strawberry transbasin diversions.

The Draft EIS (Section 3.2.6.3.1 on page W 3-32, Section 3.2.6.3.5 on page W 3-38, Section 3.2.6.3.7 on page W 3-49, Section 3.2.6.4.1 on page W 3-50, Section 3.2.6.4.4 on page W 3-50, Section 3.2.6.4.7 on page W 3-54, 3.2.6.5.1 on page W 3-54), errata included in this Final EIS, and the information contained in Section 3.2 of this Final EIS state and/or explain why downstream water users would not be impacted by the Proposed Action or DRP alternatives.

Comment Letter No. 18

SALT LAKE COUNTY WATER CONSERVANCY DISTRICT

David G. Ovard, *General Manager, Secretary-Treasurer*
Richard P. Bay, *Asst. General Manager, Chief Engineer*

Board of Directors
Gerald K. Maloney, *Chair*
Gary C. Swensen, *Vice Chair*
Thomas W. Forsgren
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Theron B. Hutchings
Margaret K. Peterson
B. Jeff Rasmussen

August 13, 1996

HAND DELIVERED

Ms. Karen M. Ricks
Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058

Dear Karen:

RE: Written Comments to the Draft Environmental Impact Statement on the Proposed Wasatch County Water Efficiency Project and Daniel Replacement Project

Please accept the following as written comments to the Draft Environmental Impact Statement (DEIS) on the proposed Wasatch County Water Efficiency Project and Daniel Replacement Project. Comments are based on our staff reading of the DEIS, attendance at public hearings, and conversation with CUWCD staff.

Water Resources

18.1 Though the document states several times that "conserved water" will be the source of replacement water to the Daniel Irrigation Company, supplemental water to the Heber Valley streams, and water to mitigate the effect on downstream users, the volumes are not quantified. Additional data from the PROSIM program along with estimated annual demands for each of the three uses mentioned above should be included in the final EIS to verify that the projects are hydrologically sound. We fail to understand the term "conserved water". The project proposes to beneficially use the same quantities of water that are currently used in Heber Valley over an expanded land area.

18.2 Cont. The proposed method for accounting the "conserved water" is detrimental to the CUP water supply and jeopardizes the yield of Jordanelle Reservoir. Section 1.6.3 should state that the accounting interval shall be one year for "conserved water" and its uses. The multi-year storage concept that was designed for Jordanelle Reservoir dictates that average or intermediate water years are critical to its long-term operation. Supplemental stream flows and irrigation deliveries to Heber Valley should be reduced annually if there is not sufficient "conserved water". It

Responses to Comment Letter No. 18

18.1 Table 3-10 on page W 3-33 of the Draft EIS shows the amount of water that would be conserved by the Proposed Action and the annual quantities that would be delivered to Daniel Irrigation Company, released to local streams as supplemental instream flow or released directly down the Provo River. An updated version of Table 3-10 also has been included in the errata summary of this Final EIS (please see the Errata Summary for this change to page W 3-33). Water budget diagrams and a map showing the average annual quantities of conserved water and its place of use are presented in Section 4.3 of the Water Resources Technical Report, which provides a more detailed discussion of conserved water uses. The water budget diagrams from the Water Resources Technical Report and related information have been added to this Final EIS (see Section 3.2).

Public Law 102-575 defines water conservation as follows: "The term conservation measure(s) means actions taken to improve the efficiency of the storage, conveyance, distribution, or use of water, exclusive of dams, reservoirs, or wells."

Water conservation in the Heber Valley is calculated as the change in water diversions for irrigation use, less any amount used to avoid impacts within Heber Valley. Conserved non-CUP water may not be used for purposes that increase the net consumption of water in Heber Valley. Most conserved water does not increase water supplies because most unconsumed irrigation water in Heber Valley becomes the water supply of downstream users. The non-CUP conserved water would be used for non-consumptive local streamflow enhancement and would return to the Provo River system.

18.2 The proposed method for accounting the conserved water is not detrimental to the CUP water supply. The operational analysis conducted using the PROSIM model and summarized in the Water Resources Technical Report and EIS shows that the CUP water supply and yield are not adversely impacted by the storage, reregulation and release of conserved water. As described in Section 1.6.3 of the Draft EIS on page W 1-14, and Section 2.4.4.3 of the Water Resources Technical Report, a multi-year storage concept is necessary and would help to meet demands under the Proposed Action in critically dry years and before the start of irrigation diversions. The multi-year storage concept is critical to operations under the Proposed Action.

As described in Section 1.6.3 of the Draft EIS on page W 1-14, and in Section 2.4.8.1 of the Water Resources Technical Report, supplemental stream flows and irrigation deliveries in Heber Valley would be reduced under certain hydrological conditions when there is not sufficient conserved water.

The source of the 2,900 acre-feet/year that would be delivered to DIC (to replace their discontinued Strawberry transbasin diversions) would be water conserved from the Heber Valley CUP agricultural water supply.

As described in Section 3.2.6.3.5 of the Draft EIS on page W 3-38, and in Section 2.4.8.2 of the Water Resource Technical Report, reservoir levels would not be drawn down to levels that would reduce the delivery of CUP M&I water. The minor amounts documented in the "Change from Baseline" column of Table 3-14 on page W 3-41 of the Draft EIS do not represent a significant impact upon the water supply of Jordanelle Reservoir. The minor reservoir drawdowns would be necessary to operate the Proposed Action and the DRP.

18.2 Cont. should be stated clearly that all irrigation deliveries to Heber Valley, including all replacement water to DIC should be counted as part of the total CUP water originally allocated to Wasatch County for irrigation from Jordanelle Reservoir. Section 3.2.6.3.5 verifies that under the proposed action, Jordanelle Reservoir storage will annually be 8,600 acre-feet less than the modeled baseline levels. Annual supply to the three uses should match the volume "conserved" by the Wasatch County Water Efficiency Project and place no further burden on the Jordanelle Reservoir water supply. The "change from baseline" column of table 3-14 should total 0 acre-feet and 0 percent. If the project cannot be implemented without impacting the baseline water supply, then it ceases to be a conservation project.

Water Rights and Agreements

18.3 Not only should the projects be contingent entirely upon the approval of all necessary water right change applications to the State Engineer, but all provisions of the Deer Creek Reservoir/Jordanelle Reservoir Operating Agreement dated November 1, 1994, should be adhered to. The EIS should indicate this intention and reference the appropriate sections of the agreement within its sections. In no way should these projects impact downstream water rights holders in quantity or timing of their water deliveries.

Water Quality

18.4 Section 5.3.2.2 indicates that water quality will not be impacted adversely. We request that the study that was used to arrive at this assumption be sent to us for further review. In addition to those water quality parameters studied in the DEIS, contaminants regulated by EPA drinking water standards should be reviewed. Use of water from the Provo River for drinking water purposes increases each year. The slightest increase to some regulated constituents can translate to large capital expenditures at drinking water treatment plants and violation of Federal and State laws.

Sprinkler Irrigation System

18.5 The project construction should be contingent on the receipt of complete anticipated funding from Public Law 83-566 and the Natural Resources Conservation Service. Further, the EIS should state that the assumed reduction of water consumption to 3 acre-feet per acre will have to be verified and the project benefits and deliveries adjusted to account for the actual usage.

18.3 Section 1.6.1 of the Draft EIS on page W 1-9 states that approval of water right change applications is necessary for the non-CUP conserved water and is included in Table 1-3 on page W 1-11 of the Draft EIS. The Section 207 phase of the project and its associated supplemental instream flows are contingent upon the approval of these change applications. Section 1.6.2 on page W 1-14 states that a river operational procedure would be developed during the water right change application process to determine the quantity and timing of releases needed to avoid water supply impacts on downstream users. Please see the Errata Summary for changes to Section 1.6.2 on page W1-14 regarding the text concerning the Deer Creek/Jordanelle Operating Agreement.

18.4 As discussed in Section 2.2.1 of the Water Quality Technical Report, the analysis focused on water quality issues associated with nutrients, sediment, herbicides and temperature because these parameters reflected the concerns expressed during scoping, and the Proposed Action and alternatives do not include activities that would affect other water quality parameters.

18.5 Prior to implementation of the Section 207 phase of the Proposed Action, landowners in Heber Valley would commit to install sprinkler systems regardless of the availability of PL-566 funding. There is therefore no need to make implementation of the project conditional on PL-566 funding. This project is requesting funds from the Water Conservation Credit Program (Section 207) and a condition of such funding would be the implementation of safeguards to monitor water use and water conservation savings.

SLCWCD Petition for M&I Water

According to the Petition to the Central Utah Water Conservancy District for Allotment of Water for Municipal and Industrial Use, dated June 10, 1971, Salt Lake County Water Conservancy District (SLCWCD) has been granted 50,000 acre-feet of M&I water annually from the Central Utah Project. The full annual delivery of that water must be met according to the Petition, which includes making deliveries upon demand at times and flow rates required by SLCWCD.

In addition, SLCWCD owns Provo River rights, stock in the Provo River Water Users Association, upper Uinta Lake storage rights, and Weber River rights and Weber River Water Users Association stock that is transported in the Provo River. The Wasatch County Water Efficiency Project and Daniel Replacement Project may not affect the delivery of CUP water under SLCWCD's petition or its other water rights and stock holdings in quantity, timing, delivery, or quality.

Thank you for the opportunity to comment on this DEIS. We request that all further notices be send to us regarding this DEIS and related issues.

If you have any questions, please feel free to call me.

Sincerely,

David G. Ovard

David G. Ovard
General Manager

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State of Utah

GOVERNOR'S OFFICE OF PLANNING AND BUDGET
Resource Development Coordinating Committee

Michael O. Leavitt
Governor
Brad T. Barber
State Planning Coordinator
James L. Dykmann
Committee Chairman
John A. Harja
Executive Director

UTAH CENTENNIAL 1896-1996

116 State Capitol Building
Salt Lake City, Utah 84114
(801) 538-1027
Fax: (801) 538-1547

August 13, 1996

Karen Ricks
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

SUBJECT: Wasatch County Water Efficiency Project and Daniel Replacement Project DEIS
State Identification Number: UT960617-010a

Dear Ms. Ricks:

The Resource Development Coordinating Committee (RDCC), representing the State of Utah, has reviewed this proposal. Comments from State agencies are as follows:

Department of Environmental Quality, Division of Drinking Water

The Division of Drinking Water highly recommends that the proposed action be implemented as soon as possible.

19.1 With the pressurized secondary water system as proposed in the Heber City area, there is an advantage for Heber City to decrease the demand on their current culinary water system by as much as 50%. As per Utah Code 19-4-112, we recommend that the City of Heber have control over this portion of the proposed secondary water system. This will facilitate the safety of the culinary water system by avoiding cross connections. All homes that connect onto the pressurized system must be required to disconnect their sprinkling system from the culinary water system. This should be certified by a City inspector.

If you have any questions concerning these comments please contact Kimball Wallace at (801) 536-0048.

Department of Natural Resources

Before providing specific comments, we have the following general comments. Many of our comments on the PDEIS have been addressed in the DEIS. Where they haven't, we have repeated them here. Also as previously stated, the Division of Water Rights does not endorse the concepts, modeling, terminology, or conclusions set forth in the DEIS. The Division will independently review and act upon change applications after they are received by that office. The course of action taken by the State Engineer will likely depend on whether or not agreements

Responses to Comment Letter No. 19

19.1 The Heber City Secondary System (HCSS) is discussed in Section 1.3.2 on page W 1-4 and Section 3.1.2.2 on page W 3-7 of the Draft EIS as a local development project associated with construction of the Proposed Action. Heber City would be responsible for planning, funding and constructing the HCSS distribution system. The implementation and funding of the HCSS is independent of the Proposed Action, but two of the pumping facilities (funded by Heber City) included in the Proposed Action would improve the ability of Heber City to implement the HCSS.

between impacted water users and the CUWCD can be reached. Paragraph 116 of the Morse Decree emphasizes the importance of Heber Valley return flows as being part of the natural flow supply to downstream water users.

19.2 W S-1 **Left col., 5th para. Sec.1.1** The Aquatic Mitigation Plan for the Strawberry Aqueduct and Collection System (USFWS 1988) is not cited in the References, and is later incorrectly referenced as a USBR 1988b document in the PRRP DEIS.

19.3 W S-5 **Section 3.2.1** The conclusions stated herein do not necessarily represent those of the State Engineer. Water users who rely on model output to make decisions should be aware of the model assumptions and limitations. In order to prevent adversely impacting downstream water users, the CUWCD must (1) enable the commissioner to accurately predict what the Provo River inflow to Deer Creek Reservoir would have been without WCWEP, and (2) supply sufficient Jordanelle Reservoir storage water or other water to compensate for any reductions.

19.4 W S-5 **Section S.3.2.3** The Proposed Alternative would increase upper Strawberry River basin wetlands but would decrease wetlands in Heber Valley. These habitats are not the same and therefore establishing one does not offset the loss of the other (i.e., 76.4 acre increase in Upper Strawberry minus 20.7 acre loss in Heber Valley wetlands does not equal a net increase of 53.6 equivalent wetland habitat acres).

19.5 W S-6 **Left col., 2nd para. Sec. 3.2.5** Please clarify that the net increases of 53.6 acres and 74.3 acres of **wildlife habitat** are the same pieces of ground as the net increases of wetland habitat, and not separate habitats.

19.6 W S-6 **Left col., 3rd para. Sec. 3.2.6** Please clarify "what" provides peregrine falcon prey **habitat**--the Proposed Action? DRP? wetlands habitat? marginal orchid habitat? (The frequency of peregrine in the area of impact is so infrequent (page W 3-103, left col., 3rd para.), that it seems almost ridiculous that any wetlands are referred to as potential foraging habitat or potential habitat for peregrine prey.)

19.7 W S-7 **Section 3.3, Insert S.3.3.3** ***Water Right Issues.*** The Proposed Action cannot be implemented without first resolving water right issues. CUWCD, DOI, Heber Valley water users and potentially impacted downstream water users must enter into agreements and resolve issues in order to get the necessary change applications approved to store Heber Valley direct-flow Provo River water in Jordanelle Reservoir.

19.8 W 1-2 **Right col., 4th & 5th para., Sec.1.2.1 The mandate for the Daniels Replacement Project** is properly described in this "Needs" section. However, the description of the No Action Alternative (Sec. 1.3.5) completely ignores this mandate. **The No Action Alternative section here (page W 1-5) and in the Summary (page W S-3) needs to be re-written** to reflect this obligation.

19.2 Please see the Errata Summary for changes to the References Section on page R-8.

19.3 CUWCD and the U.S. Department of the Interior intend to prevent impacts on downstream water users in accordance with the commentor's suggestion, as indicated in Section S.3.2.1 on page W S-5, Section 1.6.1 on page W 1-9 and Section 1.6.2 on page W 1-14. The first paragraph of Section 1.6.2 on page W 1-14 is consistent with the comment. An operational procedure would be developed by CUWCD to identify inflow to Deer Creek Reservoir that would have occurred without the WCWEP or DRP. Releases from Jordanelle Reservoir would be used under the WCWEP or DRP to avoid reductions in inflow and prevent potential impacts on downstream water users.

19.4 The comment is correct. Relevant changes in the wetlands sections have been incorporated into the Final EIS. Please see the Errata Summary for changes to Section 3.4.6.3 on page W 3-71, Section 3.4.6.3.1 on page W 3-72, Section 3.4.6.3.6 on page W 3-74, and Section 3.20 on pages W 3-172 and W 3-173. Tables 3-27, 3-28 and 3-29 have been revised and are included in the Errata Summary. Additionally, the Summary section and Chapter 2 of the EIS have been revised in the Final EIS to incorporate relevant changes in the wetlands sections.

19.5 Please see Section 1.5.5 of the revised Summary in the Final EIS for clarification of the wildlife habitat.

19.6 The wetlands habitat also provides habitat for peregrine falcon prey. Detailed information on peregrine falcon habitat, which includes certain types of wetlands, is presented in Section 3.7.5.1 on pages W 3-102 and W 3-103 of the Draft EIS.

A comprehensive approach was used to evaluate project effects on threatened and endangered species, which included determining the presence of habitat for peregrine falcon in the impact area. Potential impacts were disclosed because the area contains foraging habitat for peregrine falcon, and the species may use this habitat, albeit infrequently. Habitat is important for migrating individuals and expanding populations of peregrine falcon.

19.7 A discussion regarding water rights approvals has been added to the Areas of Concern section of the Final EIS Summary. The comment implies that downstream water users may be impacted by the Proposed Action and alternatives. This would be inconsistent with a purpose of the Proposed Action and DRP Alternatives listed in Section 1.2.2 on page W 1-2. The Proposed Action and alternatives have been formulated to avoid any impacts on the water supplies of downstream water users, as described in Section 1.4.2 on pages W 1-8 and W 1-9. The full delivery of downstream supplies was an operating constraint and assumption in the PROSIM model runs conducted to simulate operation of the Proposed Action and alternatives, as described in Appendix B, Section B.2.1.1 on pages B-1 through B-3. The model results confirmed that the Proposed Action and alternatives can be implemented without reducing the supplies of downstream water users. The Draft EIS states the impact analysis results for the Proposed Action in Section 3.2.6.3.5 on page W 3-38, for the DRP With Pipeline Alternative in Section 3.2.6.4.1 on page W 3-50, and for the DRP With Canal Alternative in Section 3.2.6.5.1 on page W 3-54.

19.8 The No Action Alternative does not have to meet the needs defined in Section 1.2.1 (including the need to comply with the specific requirements of CUPCA related to replacing the DIC supply). Analysis of a No Action alternative is mandated by the CEQ regulations at 40 CFR 1502.14. These regulations also direct agencies to look at reasonable alternatives that may not be within the jurisdiction of the lead agency. This provides the decision-maker with a full range of alternative choices and may form the basis for needed legislative change.

The Aquatic Mitigation Plan for the Strawberry Aqueduct and Collection System–December 1988 was initially the responsibility of the Bureau of Reclamation (Reclamation), and Reclamation has in fact carried out some of the mitigation commitments and obligations. As documented on page three of the Final Supplement to the Final Environmental Impact Statement (INT-FES 90-7, dated February 22, 1990) for the Diamond Fork System, the highest priority aquatic mitigation measure is the restoration of historic stream flows in the upper Strawberry River which would be accomplished

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by terminating the Daniel Irrigation Company's transbasin diversions and implementation of the Strawberry Exchange. Reclamation's July 1990 Record of Decision (ROD) for the Diamond Fork System obligated Reclamation to implement the Aquatic Mitigation Plan. This obligation was further documented in the Department of the Interior's January 1995 ROD for the Diamond Fork Pipeline. With the enactment of CUPCA, the Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission) was established and is responsible to coordinate the implementation of the mitigation and conservation provisions of CUPCA including Reclamation's mitigation obligations which have not been completed (see Section 304 of CUPCA).

Therefore, if the No Action Alternative is selected, the Mitigation Commission would still have an obligation to implement the Strawberry Exchange in some fashion or to seek relief from the previous commitment.

19.9 **W 1-4 1.3.2, and page W 1-5, Sec.1.3.4** Please clarify source of water for Proposed Action and DRP with Canal in the description of the projects. (It is stated very clearly in description of DRP with Pipeline, 1.3.3., page W 1-5, left col., 1st para.)

W 1-8 Section 1.4.2 The fourth to last sentence of second paragraph should have the words "continue such benefits and to" between *to* and *avoid* and have the qualifier "during most years based on the PROSIM model assumptions and limitations" at the end of the sentence. The State Engineer doesn't necessarily agree that the modeling is representative of actual impacts to downstream water users.

19.10 The third to last sentence in the second paragraph indicates that conserved water is not stored whenever storage of such water decreases the supply to downstream users. In practice, due to the interaction between surface flow and groundwater return flow, such operation would be very difficult because there is no way to know ahead of time whether or not conserved water would have returned to the river from groundwater storage augmenting the flows to downstream users. To clarify, combine this sentence with the next sentence as follows: "This is done by (1) storing excess conserved water in Jordanelle Reservoir that may or may not have returned to the river to supply downstream water users at a later time under pre-WCWEP conditions and (2) releasing conserved water and/or CUWCD storage water to make up the difference whenever the WCWEP/DRP operation reduces the downstream users' water supply below the quantity they would have received without implementation of the WCWEP."

The operating agreement alone only protects prior downstream rights and supplies under the No-Action Alternative. The operating agreement doesn't address any of the impacts caused by the WCWEP/DRP.

The second to last sentence of the second paragraph indicates shortages to downstream users will be made up on a month-delay basis. Wouldn't the delay time period be based on agreements with impacted water users? Perhaps such delay would impair the rights of water users.

19.11 **W 1-9 Section 1.5, Last sentence:** Insert the words "and the CUWCD" between "entities" and "would". Providers of replacement water are important parties to the necessary agreements.

19.12 **W 1-9 Section 1.6.1, General comments:** Provo River water right change applications and water user agreements should be identified as issues yet to be resolved.

First sentence of second paragraph: Change "that would call for storage of the" to "with the State Engineer to store their".

19.13 Cont. **W 1-13 Table 1-4,** Downstream water users' supplies could be impacted if they are not replaced with CUWCD water. There must be an agreement between downstream users and the

19.9 Please see the Errata Summary for changes to Section 1.1 on page W 1-1, which states that the source of replacement water to DIC under the Proposed Action is water conserved from the CUP supply for Heber Valley. This is accomplished by reducing the demand for CUP water through constructing a more efficient irrigation delivery system. The first sentence of Section 1.3.4 on page W 1-5 states that the DRP With Canal Alternative would replace water currently diverted from the upper Strawberry River basin by DIC with CUP agricultural water from Jordanelle Reservoir.

Please see the Errata Summary for changes to Section 1.3.4 on page W 1-5 that clarify the source of water for the DRP With Canal Alternative.

19.10 Please see the Errata Summary for changes to Section 1.4.2 on page W 1-9. The words suggested by the comment "during most years" are not appropriate because the procedures described in Section 1.6.2 are intended to avoid impacts on downstream user water supplies in all years. It was not intended to include a one-month delay in correcting impacts of the project. The suggested wording of the comment that has been incorporated in the Errata Summary corrects this error.

As pointed out in the comment, the existing Deer Creek/Jordanelle Operating Agreement does not cover impacts caused by the Proposed Action. However, the procedures discussed in Section 1.6.2 on page W 1-14 would avoid impacts on downstream water users.

19.11 Please see the Errata Summary for changes to Section 1.5 on page W 1-9.

19.12 Please see the Errata Summary for changes to Section 1.6.1 on page W 1-9.

19.13 The Proposed Action was formulated to avoid impacts on downstream water user's supplies and to protect the water rights of downstream users. This is consistent with one of the purposes listed in Section 1.2.2 on page W 1-2.

The WCWEP and the DRP alternatives cannot be implemented without approval of related water rights change applications by the State Engineer's office. Individual irrigation companies holding direct-flow water rights would file change applications that would allow for reregulation and release of the conserved water in Jordanelle Reservoir at the same priority associated with their direct-flow right. These applications would need to specify a change in place of use to include DIC, Heber Valley streams and the North Fields area. The change applications would go through the State Engineer's review and comment procedures. Such approval is expected since the WCWEP and alternatives would not reduce downstream water supplies and would comply with applicable environmental requirements.

19.13 Cont. CUWCD to provide replacement supply whenever Heber Valley return flows are reduced by the WCWEP/DRP.

19.14 **W 1-14 Section 1.6.2,** Last two sentences of first paragraph: The needed agreement(s) with prior downstream water users and/or water right applications for such operation are not yet in place. This should be included under S3.3.3 as an issue yet to be resolved.

Second paragraph: Since there may not be enough conserved water stored in Jordanelle Reservoir to meet these demands, the supply must also include other storage water in Jordanelle Reservoir. The limited supply of conserved water in dry years should be considered by water users when entering contracts or agreements.

19.15 **W 1-14 Section 1.6.3,** There may be problems associated with the proposed pre-release operation. There is no provision to carryover the conserved water storage debt to the next year. The debt must be carried over whenever the demand on conserved water by prior users is greater than the conserved-water supply in the reservoir. Even if the debt is carried over, senior-right users would risk not receiving their water since they are borrowing it from Jordanelle storage water already allocated to other users. It is recommended that operating procedures be developed that ensure water is available to make the downstream users whole.

The CUWCD plans to store excess "conserved" water produced by the WCWEP as new system storage whenever more conserved water is available than is needed to meet DIC and downstream obligations, yet in dry years when there is not sufficient conserved water to meet these obligations the CUWCD proposes to use Heber Valley CUP agricultural water to make up any shortages.

19.16 **W 1-45 Section 1.8.6,** Last sentence of first paragraph indicates that excess water not used to supplement streamflows will be released from Jordanelle Reservoir and flow down the Provo River. Paragraphs W1.6.2 and B.2.1.1.2 indicate this water will be stored by the CUWCD. Which?

If the Timpanogos and Wasatch canals are not capable of receiving the flow delivered to them by the river commissioner or if they take more water than they are entitled to receive, the river distribution system in Heber Valley would be impacted. Such operation places an additional burden on the commissioner. It may also require better control structures and measuring devices at many of the Heber Valley Diversions. Until the details of the proposed operation are clearly identified, the operational impacts caused by such operation cannot be addressed. There may be significant impacts.

19.17 **W 1-45 Section 1.8.6 Operation and Maintenance** First paragraph. The proposed action includes the delivery of CUP water. Isn't CUP water new water?

Sixth paragraph. To better understand the proposed action and compare it with baseline and the no action alternative we suggest including the no action alternative in table 1-13. Also, the transmission loss appears to be 6.4% and not 4%.

19.14 Please see the response to Comment 19.13. The actual issue that is yet to be resolved is the filing and processing of water right change applications. This is referenced in the new Summary section of the Final EIS (see Section 1.2). As stated at the end of Section 1.6.2 on page W 1-14 of the Draft EIS, these procedures will be developed as part of the water right change applications.

As stated in Section 1.6.3 of the Draft EIS on page W 1-14, pre-release of conserved water would reduce CUP agricultural water deliveries in Heber Valley during years when Jordanelle Reservoir approaches the minimum conservation pool. The limited supply of conserved water in dry years could result in the reduction or elimination of supplemental water deliveries to some streams in Heber Valley. If elimination of supplemental flows to some Heber Valley streams is not sufficient to refill the volume of pre-released conserved water, CUP agricultural water deliveries to Heber Valley would be reduced. The supply of conserved water during dry years would be discussed with Heber Valley water users when agreements or contracts are finalized.

19.15 The operating procedures that are identified in Sections 1.6.1, 1.6.2 and 1.6.3 on pages W 1-9 and W 1-10 of the Draft EIS address the issues raised in the comment.

The second part of the comment correctly re-phrases what is stated in Section 1.6.3 on page W 1-14.

19.16 The statements in all three sections that are referenced in the comment are correct. Most conserved water would be re-regulated in Jordanelle Reservoir and released to supplement the flows of some Heber Valley streams or held temporarily and released to the Provo River to match the timing of when the water would have returned to the river system without the project. Some conserved water would be released down the river without re-regulation in cases of lack of storage space or need to store the water. Whether temporarily stored or not, conserved water that is not routed through the Heber Valley would be eventually released down the Provo River.

As described in the Sections 1.8.2.1.1 and 1.8.2.1.2 on page W 1-20, the Timpanogos and Wasatch turnouts from the Provo River would be reconstructed with new radial gates, and the canals would be improved over existing conditions with better water control structures. The new turnouts from the river would allow the River Commissioner to more accurately control the amount of flow through these diversion structures. As a result of the canal improvements, the diversion capabilities of the facilities would be improved compared to present conditions.

19.17 As indicated in Section 3.2.5 on page W 3-12, baseline represents future conditions without the project, including all effects of Jordanelle Reservoir. Therefore the distribution of CUP water from Jordanelle Reservoir was included in the baseline. The impact of this water on Heber Valley and elsewhere was analyzed in the M&I EIS, which covered Jordanelle Dam construction and operation.

This portion of Chapter 1 is intended to only define the Proposed Action and DRP alternatives. Table 3-9 on page W 3-31 of the Draft EIS, provides the requested comparison to baseline. The No Action Alternative would be a continuation of the baseline conditions. A more detailed comparison of water resource changes to baseline is presented in the Water Resources Technical Report, which contains the supporting material for the EIS.

The weighted average conveyance loss in the canals that would convey water for the Proposed Action is 6.4 percent. The 4 percent transmission loss of CUP water delivered from Jordanelle Reservoir is an administrative factor based on the Morse Decree and is set by the State Engineer, which is not relevant to Table 1-13. Please see the Errata Summary for changes to Section 1.8.6 on page W 1-45.

19.18 **W 1-69 Right col., 4th para., Sec. 1.12.9.1** The SOP for Aquatic Resources fails to consider activity in streams during spawning or egg development periods. The reader is also referred to the hazardous materials procedures and reveg/erosion and wetlands SOP's, which also do not address fish spawning nor egg incubation in the streams. At least acknowledging that there are critical periods assures us that the Project proponents are aware of the aquatic resources, even if impacts cannot be totally avoided. This needs to be addressed in the Environmental Commitments Checklist.

19.19 **W 2-1 Section 2.2,** When excess water is applied to the agricultural lands in Heber Valley, downstream users benefit from the return flows that occur later in the year and no Heber Valley CUP storage water or Jordanelle Reservoir storage capacity is needed to supply replacement water to downstream users.

19.20 **W 2-2 Table 2-1,** Some of the water resource categories are presented in table form as average monthly changes. A monthly average change of zero doesn't indicate zero impact to a water user. For example, downstream users are adversely impacted if they receive more water during wetter-than-average months and less water during the dryer-than-average months. When averaged together, such gains and losses may appear to cause no impact even though such user is adversely affected. The water resource summaries do not address potential adverse impacts to individual water users or water rights on the Provo River caused by the WCWEP/DRP.

19.21 **W 2-4 Table 2-1,** It appears that there will be net increases of 53.6 or 74.3 acre of **wildlife habitat**, in addition to a net increase of 53.6 or 74.3 acres of wetlands. Please clarify that these are indeed separate net increases, or that they are deceptively one in the same, but described vaguely enough to appear as separate net increases. (Inserting the word "wetland" in the row heading under Wildlife Resources would help to clarify what kind of wildlife habitat is increasing.)

19.22 **W 2-7 Section 2.3.3 or 2.3.5,** would be a good location to clarify whether the **wetland** and **wildlife habitat** increases are the same or separate increases. It is still not clear after reading these two descriptions whether the wildlife habitat is wetlands, or uplands, or riparian areas, or summer range, etc.

19.23 **W 2-7 Right col., 1st para., Sec. 2.3.4** This paragraph implies that the non-game species **leatherside chub**, prefers existing habitat conditions in streams. This implication does not agree with the last statement on page W 3-11 of the Aquatic Resources Tech. Report. Please clarify which statement is correct.

19.24 Cont. **W 2-7 Section 2.3.4** It is anticipated that under the Proposed Alternative there will be a major increase in trout fisheries in many of the Heber Valley and upper Strawberry River basin streams, which should enhance some native species (i.e., cutthroat trout). Impacts to other native species such as leatherside chub and spotted frog should not be ignored as a result of improving native sport fish populations. Proposed or Alternative Actions should be in accordance with the goals, objectives, and activities identified in the draft

19.18 Critical time periods for fish spawning and egg incubation are included in the Aquatic Resources section of the Draft Environmental Commitments List (please see Appendix 1 in the Final EIS). Construction in Heber Valley streams where brown trout spawning or egg incubation occurs would be minimized. Construction in upper Strawberry Valley streams where cutthroat trout spawning occurs or egg incubation occurs would be minimized.

19.19 The comment is correct that under the No Action Alternative, excess water applied to agricultural lands in Heber Valley returns to the Provo River later in the year, which benefits downstream water users. This is what occurs under baseline conditions, as stated in the first paragraph of Section 2.2 on page W 2-1.

19.20 Table 2-1 in Chapter 2 is not intended to be a complete definition of potential impacts. Table 2-1 has not been changed because it only presents a comparative analysis of average monthly impacts on an annual basis of the Proposed Action and DRP alternatives for the benefit of the public and the Department of the Interior decision-maker. More detailed analysis results of water resource impacts of the Proposed Action and DRP alternatives, on a mean monthly basis, is presented in the following tables and figures in Section 3.2.6, Chapter 3 of the Draft EIS:

Table 3-11 on page W 3-34
Figure 3-2 on page W 3-36
Table 3-12 on page W 3-37
Figure 3-3 on page W 3-39
Table 3-13 on page W 3-40
Table 3-14 on page W 3-41
Table 3-16 on page W 3-51
Table 3-17 on page W 3-52
Table 3-18 on page W 3-55
Table 3-19 on page W 3-56

The water resources analysis was performed on a month-by-month basis for a 40-year study period. There are no detailed summaries of impacts on downstream water users below Deer Creek Reservoir included in the EIS because the Proposed Action or DRP alternatives would not cause such impacts.

More detailed information on potential water resource impacts is included in Chapter 4 of the Water Resources Technical Report.

19.21 The 53.6 and 74.3 acre wildlife increases noted in the comment are the same areas that would experience an enhancement of wetlands. No other type of wildlife habitat other than wetlands would be enhanced under the Proposed Action and DRP alternatives.

19.22 Please see the revised Comparative Analysis in Section 2 of the Final EIS, which incorporates changes suggested in the comment.

19.23 Please see the revised Comparative Analysis in Section 2 of the Final EIS, which clarifies the statement addressed by the comment.

19.24 Section 2.3.4 of the Draft EIS on page W 2-7 identifies the potential impacts on leatherside chub and states that the enhancement of trout habitat in these streams may cause adverse and significant impacts on non-game species, including leatherside chub. Potential impacts on leatherside chub are described in more detail in Section 3.5.6.3.2.2 on page W 3-90. Potential impacts on spotted frog as a result of the Proposed Action are described in Section 3.7.6.3.5 on page W 3-106. Additional information is available in Section 4.3.3.2 (page W 4-6) of the Aquatic Resources Technical Report.

The draft Conservation Agreement and Strategy for Bonneville cutthroat trout (September 1996) is being reviewed by CUWCD. Conservation actions and objectives identified for Bonneville cutthroat trout in the Provo River drainage will be considered by CUWCD in implementation of the Proposed Action or DRP alternatives.

19.24 Cont. Conservation Agreements for Bonneville cutthroat trout and spotted frog, the draft Conservation Plan for leatherside chub, which are being developed and the draft Recovery Plan for June sucker.

19.25 W 2-7 **Section 2.3.6** This statement (DRP alternatives does not impact spotted frog) does not agree with page W 4-9, sec. 4.5.2.5 of TES Tech. Report, which states that construction of the DRP with Pipeline (and also canal) alternative, would directly impact spotted frogs by temporarily (for 2 growing seasons) removing known-to-be-occupied habitat. For spotted frog, we consider this a serious impact.

19.26 W 3-7 **Section 3.2.1**, Delete "including approved change applications as discussed herein" from the last sentence of the first paragraph. Approvals of change applications are issues yet to be resolved, and will likely require agreements between the CUWCD and various impacted water users.

19.27 W 3-8 **Section 3.2.2.1 Surface Water Issues, First bullet**
The reason for eliminating the issue of existing water right holders of conserved water to a new place of use is not explained. Also, it states "The replacement supply would come from water conserved by water right holders in Heber Valley." But in the second bullet it indicates that the replacement water would come from Bonneville Unit CUP water. This appears to be a contradiction.

19.28 W 3-12 **Section 3.2.5.1 Water Supply Availability**
Sixth paragraph. Are existing conditions the same as baseline? Existing conditions would seem to imply present conditions whereas baseline is a situation that is assumed.

19.29 W 3-17 **Right col., 3rd pars., 3.2.5.4.1.1**, Whiskey Springs picnic area is incorrectly referred to (twice) as campground.

19.30 W 3-22 **Section 3.2.5.5**, The DEIS indicates that flow analysis on the Lower Provo was conducted using current flows at the Provo City gage and no impact was found. More detail on this analysis is required before we can agree to no impact. In addition, minimum instream flows for the lower Provo (75 cfs as required by CUPCA) were not modeled to determine baseline conditions, Proposed Alternative or DRP Alternatives; to say no impact on June Sucker once these flows are implemented is not known. If these flows will be required in the future, then an analysis using these flows should be conducted as well.

19.31 W 3-22 **Section 3.2.5.5.6**, Provo River irrigation water returning to the river is important and should be included in models used to determine flows to downstream water users.

19.32 Cont. W 3-23 **Section 3.2.5.8**, The last sentence in this paragraph should read, "The Morse Decree (Morse Decree 1921) improves the water supply of downstream water users by using Heber Valley groundwater storage to delay the return flows to downstream water users."

The draft Conservation Agreement for spotted frog and the draft Conservation Plan for leatherside chub have not been completed. CUWCD understands that these agreements are in the process of being prepared. CUWCD will review these documents when they are available and consider them in implementation of the Proposed Action or DRP alternatives.

19.25 The comparative analysis presented in Section 2.3.6 of the Draft EIS considers the impacts *after* mitigation. Therefore, mitigation measures are incorporated into the comparative analysis of impacts, and the residual impacts with mitigation applied are presented in Chapter 2. Please see Section 2.1 of the Final EIS. The impacts of the DRP with Pipeline Alternative and DRP with Canal Alternative on spotted frog, presented in Sections 3.7.6.4.5 and 3.7.6.5.5 on page W 3-109, would be fully mitigated as discussed on pages W 3-171 and W 3-172 in Section 3.19.4 of the Draft EIS. Impacts are not expected to occur, however, should impacts on spotted frog be identified, the Mitigation Commission would be responsible for mitigation.

19.26 Please see the Errata Summary for changes to Section 3.2.1 on page W 3-8.

19.27 The replacement supply for the Proposed Action would come from CUWCD agricultural water conserved under Section 207 of CUPCA. The replacement supply for the DRP alternatives would come from uncontracted Bonneville Unit CUP agricultural water in Jordanelle Reservoir and is different from the source of water for the Proposed Action. Please see the Errata Summary for changes to Section 3.2.2.1 on pages W 3-8 and W 3-9.

19.28 Existing conditions are not the same as baseline conditions, as stated in the Draft EIS in Section 3.2.5 on page W 3-12, which includes the availability of CUP water from Jordanelle Reservoir. As a result of the completion of filling of Jordanelle Reservoir, a new water supply will be available to the water users in the Heber Valley that is not available under existing conditions.

19.29 Please see the Errata Summary for changes to Section 3.2.5.4.1.1 on page W 3-17.

19.30 As stated in the Draft EIS, Appendix B, Section B.2.1.1.2 on page B-2, baseline flows needed in the lower Provo River to protect the June Sucker that were identified by a 1994 Biological Opinion prepared by the U.S. Fish and Wildlife Service for the Provo River Project were not altered during the modeling of the Proposed Action and DRP alternatives. Section 2.4.8.2 of the Water Resources Technical Report provides further detail on the flow requirements of the 1994 Biological Opinion. The flow requirements for the June sucker therefore were shown not to be impacted by the Proposed Action or DRP alternatives. The Fish and Wildlife Service concurred with the CUWCD biological assessment that concluded the project would not affect the June sucker or its habitat.

The 75 cfs instream flow requirement of CUPCA in the lower Provo River is intended to improve the habitat of aquatic resources. Inclusion of the 75 cfs instream flow requirement would not change the EIS modeling conclusions regarding the impacts of the Proposed Action and DRP alternatives, and furthermore it was too speculative to include this flow requirement in the EIS modeling. The incremental impacts of the Proposed Action and DRP alternatives would be the same with or without the 75 cfs flow requirement because this flow requirement is not part of the Proposed Action and DRP alternatives.

As stated in the Draft EIS, Section 3.2.5.5 on page W 3-20, the source of water for the 75 cfs instream flow is not known and is too speculative to be analyzed in this EIS. The CUPCA authorizes the CUWCD to acquire 25,000 acre-feet from willing sellers and purchases must avoid compromising groundwater resources in the Upper Provo areas. CUPCA provides funding in Section 302 to acquire these rights. To date, the CUWCD has been able to acquire only about 1,000 acre-feet of water. For the reasons stated, it is not possible to realistically model the locations where water would be moved to meet the 75 cfs instream flow.

19.31 Irrigation return flow is modeled in both the surface and groundwater models. The inflows to Deer Creek Reservoir reported in the Draft EIS, Table 3-6, page W 3-23, include return flow of irrigation water applied in Heber Valley.

19.32 Please see the Errata Summary for changes to Section 3.2.5.8 on page W 3-23.

19.32 Cont. The Morse Decree identifies Provo Division and Wasatch Division rights on the Provo River. Water distribution is performed according to a class or priority date, depending on whether the right under which water is diverted is a decreed right or established after the decree.

19.33 **W 3-25 Section 3.2.5.8.3 Wells and Springs, First paragraph.**
The third sentence is not clear. Do these wells pump 1.2 cfs on a year round basis? Also, it would be helpful to list the amount pumped by all wells on a yearly basis.

19.34 **W 3-26 Table 3-8,** Same comment as for Section 3.2.5.5.6.

19.35 **W 3-28 Section 3.2.6.1,** The second sentence should identify downstream water users and Heber Valley water users as parties to the agreement.

19.36 **W 3-28 Section 3.2.6.3.1,** Last sentence of fourth paragraph proposes to temporarily regulate conserved water in Jordanelle Reservoir in order to match the timing that it would have returned to the river under baseline conditions. In some years, there will not be enough conserved water to meet all these demands.

19.37 **W 3-28 Section 3.2.6.1 Water Supply Availability, First paragraph.**
Need to have baseline conditions in table 3-9 so water supplies and shortages can be compared. Also, it should be the **Division** of Water Resources.

19.38 **W 3-32 Right col., 4th bullet, 3.2.6.3.2** There is a discrepancy in the description of the **livestock water supply.** Will there be only one pipeline to 4 troughs, as described here? or will there be 2 pipelines and 6 troughs, as described on W 1-52, sec. 1.8.7.9? Please clarify.

19.39 **W 3-53 Section 3.2.6.4.4** The DEIS indicates that the DRP alternatives would result in an average 3 cfs decrease in flows in lower Provo. The summary on pg W S-5 indicates a 3% average decrease. This disparity of information needs to be corrected.

19.40 **W 3-54 Section 3.2.6.5.4** The DEIS indicates that the DRP alternatives would result in an average 3 cfs decrease in flows in lower Provo. The summary on pg W S-5 indicates a 3% average decrease. This disparity of information needs to be corrected.

19.41 **W 3-54 Section 3.2.6.5.1 Water Supply Availability, First paragraph.**
The second sentence is not clear. It could be read that 15% plus 510 acre-feet of additional water will be needed for agricultural purposes. Also, 510 is 17.6% of 2900.

19.42 **W 3-59 Left col., 2nd para. 3.3.5.2.3, Temperature equalization zone** of 3,280 feet. This is the 3rd different length of the zone, (approx. 300 feet in PDEIS, 6500 feet in first WQ Tech. Report), all using essentially the same equation (K_g had units of in/day in 11/95 WQ Tech Rpt, and units of sec^{-1} in 6/96 WQ Tech Rpt).

19.33 Please see the Errata Summary for changes to Section 3.2.5.8.3 on page W 3-25.

19.34 Please see the response to Comment 19.31.

19.35 The comment is assumed to refer to the third sentence of Section 3.2.6.3.1 in the Draft EIS on page W 3-28, rather than the second sentence of Section 3.2.6.1 as stated. The terms of the replacement water agreement would be among the parties identified in Section 3.2.6.3.1. It is not appropriate for downstream users and Heber Valley water users to be part of the agreement because they do not have rights to water from the upper Strawberry River basin. The rights of downstream water users would be protected by the operational procedures described in Section 1.6.2 on page W 1-14. Please see the Errata Summary for changes to Table 1-4 on page W 1-12.

19.36 The water demands discussed in Section 3.2.6.3.1 would not be met in all years. Please see the second paragraph of the response to Comment 19.14.

19.37 Table 3-9 on page W 3-31 of the Draft EIS provides a comparison of water supplies and shortages to average baseline conditions totaled for all irrigated areas. The water supply and shortage of the Proposed Action and DRP alternatives are totaled, followed by the baseline totals, followed by the percent change from baseline. More detailed information on baseline conditions by irrigated area is presented in the Water Resources Technical Report, Table 3-9 on page W 3-39.

The Board of Water Resources holds the assigned water rights of DIC. Therefore, the word "Department" has been changed in the Errata Summary to "Board" rather than Division as suggested in the comment. Please see the Errata Summary for changes to Section 3.2.6.3.1 on page W 3-28.

19.38 Please see the Errata Summary for changes to Section 3.2.6.3.2 on page W 3-32.

19.39 Please see the Errata Summary for changes to Section 3.2.6.4.4 on page W 3-50 and Section 3.2.6.4.5 on page W 3-53.

19.40 A 3 cfs reduction in flow in the lower Provo River is a 3 percent reduction, therefore there is no disparity. For clarity, the Provo River flow at the inlet of Deer Creek Reservoir shown in Table 3-18 is not the same as the total inflow to the reservoir from Heber Valley. The reduction in total inflow of 3 cfs stated in Section 3.2.6.5.5 includes the effect of changes in direct inflow to Deer Creek Reservoir from Daniels Creek and the groundwater basin. Please see the revised summary in the Final EIS and the Errata Summary for pages W 3-50 and W 3-53.

19.41 Please see the Errata Summary for changes to Section 3.2.6.5.1 on page W 3-54.

19.42 An error was found in the temperature calculations in the earlier draft of the Water Quality Technical Report dated November 1995. This error involved the units of K_R. This error was corrected in the June 1996 Draft Water Quality Technical Report. Therefore, the length of 3,280 feet given in the Draft EIS is correct.

Please see the Errata Summary for changes to Section 3.5.6.3.1.2 on page W 3-90.

19.43 **W 3-67 Left col., 3rd para. 3.4.1** This indicates that a 404 permit is not required. This may be the case. However, there is no mention that the State Engineer's office has been contacted for the purpose of inquiring whether a **State Stream Alteration permit** is required for reconstruction of diversion structures. (The work on the Diamond Fork Pipeline has been complicated by the fact that since no 404 permit was required, it was also erroneously assumed that no stream alteration permit was required.)

19.44 **W 3-68 Section 3.4.5.1 Wet Meadow Complex, First paragraph.**
The figure 1,613 acres of wet meadow complex does not relate to any figure in table 3-26.

19.45 **W 3-68 Right col., 3rd para. 3.4.5.1** Is **20%** a typographical error? If not, it is difficult for determining the basis of the calculation, based on the numbers shown in the paragraph and/or table 3-26.

19.46 **W 3-70 Section 3.4.5.1 Wet Meadow Complex, Fifth paragraph.**
Typo error with Poa pratensis.

19.47 **W 3-70 Right col., 2nd para. 3.4.5.3** When referring to the **fish hatchery**, a better name would be the Midway Hatchery, Midway Fish Hatchery, or just refer to it as the state hatchery (but not "Utah State Fish Hatchery").

19.48 **W 3-71** The Proposed Alternative would increase upper Strawberry River basin wetlands but would decrease wetlands in Heber Valley. These habitats are not the same and therefore establishing one does not offset the loss of the other (i.e., 76.4 acre increase in Upper Strawberry minus 20.7 acre loss in Heber Valley wetlands does not equal a net increase of 53.6 equivalent wetland habitat acres).

19.49 **W 3-72 Left col., 2nd para. 3.4.6.3.1** There is a discrepancy between the 22.6 acres of wet meadow impacted and the 20.7 acres of wet meadow described later in the section and shown on table 3-27.

19.50 **W 3-80 Section 3.5.4.** The DEIS does not consider the lower Provo River an area of influence for aquatic resources, which was based on the assumption that flow decreases would be too minimal to measure. The DEIS indicates that neither the proposed project nor the DRP alternatives would adversely impact the June Sucker in the lower Provo River because the change from baseline is minimal. UDWR believes that baseline conditions in the lower Provo River currently are not acceptable as a proper spawning environment to maintain a viable June Sucker population. It is not known how further alterations in this reach could impact June Sucker. Depending on time of year and flows (wet year vs. dry year), this alteration could impact June Sucker spawning and nursery habitat. This should be investigated more thoroughly. The DEIS indicates that flows would not be augmented in dry years - what constitutes a "dry year"? Additional discussion is warranted.

19.43 Please see Table 1-3 in Section 1.5 of the Draft EIS on page W 1-11, which identifies the requirement for permits to modify stream channels and diversions. Specific permit needs would be identified during the permitting phase of the project, and permit applications would be filed with the State Engineer's office well in advance of contruction.

19.44 The figure 1,613 acres of wet meadow complex includes the total acreage of the wet meadow complex mapping unit. Eighty (80) percent of the 1,613 acres is actual wetland equal to the 1,290 acres shown in Table 3-26. The mapping unit acreage is not shown in Table 3-26. The 1,290 acres of wet meadow wetland makes up about 69 percent of the total wetland area.

19.45 Please see the Errata Summary for changes to Section 3.4.5.1 on page W 3-68.

19.46 Please see the Errata Summary for changes to Section 3.4.5.1 on page W 3-70.

19.47 Please see the Errata Summary for changes to Section 3.4.5.3 on page W 3-70.

19.48 Please see the following for changes: Table 2-1 in Section 2 of the FEIS, and the Errata Summary for changes to Section 3.4.6.3 on page W 3-71, Table 3-27 page W 3-72, Table 3-28 page W3-78, and Table 3-29 page W 3-79. Please see the response to Comment 19.4.

19.49 Please see the Errata Summary for changes to Section 3.4.6.3.1 on page W 3-72.

19.50 The analysis presented in Section 3.7.6.2.2 on page W 3-105 of the Draft EIS indicated that June sucker would not be affected by the project. After reviewing the Biological Assessment, the USFWS concurred with the finding of a "no effect" on June sucker in their letter dated July 11, 1996 and stated that a biological opinion would not be required for the project.

Average, wet and dry hydrologic conditions were analyzed for the Draft EIS over the 40-year hydrologic study period 1950 through 1989. Impact analysis conclusions regarding June Sucker in the lower Provo River, stated in Section 3.7.6.3.2 on page W 3-105 of the Draft EIS, are based on the results of hydrologic modeling of average, wet and dry year hydrologic conditions. Average hydrologic conditions represent the average over the 40-year period. Wet and dry year conditions are defined in the Water Resources Technical Report in Section 2.4.2 on page W 2-11. Representative wet and dry years were chosen to help display the results of the analysis and to help define the range of potential hydrologic impacts. The years 1967, 1975, 1983 and 1986 were chosen as representative wet years and 1961, 1977, 1981 and 1988 as representative dry years. The dry year conditions referred to in Section 3.7.6.3.2 on page W 3-105 of the Draft EIS are the averages of the monthly values of the four representative dry years. The wet year conditions referred to in Section 3.7.6.3.2 on page W 3-105 of the Draft EIS are the averages of the monthly values of the four representative wet years.

Results of the hydrologic analysis of average, wet and dry years for lower Provo River under the Proposed Action are presented in the Water Resources Technical Report, Section 4.1.1.13 on page W 4-20 and Table 4-12 on page W 4-22. Flows for June Sucker spawning and nursery habitat in the lower Provo River are most important in June and July, as stated in Section 3.7.5.2 on page W 3-103 of the Draft EIS. From the Water Resources Technical Report, Table 4-12 on page W 4-22, average year hydrologic conditions in June are modeled with 33 cfs increase (8 percent change) over baseline conditions, and in July are modeled with 3 cfs increase (27 percent change) over baseline conditions. From the same table, wet year hydrologic conditions in June are modeled with 55 cfs increase (4 percent change) over baseline conditions, and in July are modeled with 29 cfs increase (40 percent change) over baseline conditions. From the same table, dry year hydrologic conditions are modeled with 1 cfs for June and July, the same as baseline conditions. Therefore, the impact analysis conclusions stated in Section 3.7.6.3.2 on page W 3-105 of the Draft EIS are correct that the Proposed Action would have no impact on June sucker or its habitat in the lower Provo River.

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The impact analysis conclusions stated in Section 3.7.6.4.2 on page W 3-106 of the Draft EIS for the DRP With Pipeline Alternative are supported by the hydrologic analysis results presented in the Water Resources Technical Report, Section 4.1.2.13 on page W 4-34 and Table 4-21 on page W 4-36. The impact conclusions stated in Section 3.7.6.5.2 on page W 3-109 of the Draft EIS for the DRP With Canal Alternative are supported by the hydrologic analysis results presented in the Water Resources Technical Report, Section 4.1.3.13 on page W 4-44 and Table 4-30 on page W 4-48.

The Threatened and Endangered Species Technical Report shows the modeled flows during the period 1950 through 1989 for the lower Provo River under baseline conditions and the Proposed Action in Appendix B, Tables B-1 and B-2.

19.51 **W 3-85 Left col., 3rd para. 3.5.5.2** UDWR 1995 and Holden et al. 1994 are not shown in the References Cited. Also, there's a sentence fragment at the end of the next paragraph.

19.52 **W 3-86 Section 3.5.6.3.1** DEIS indicates that impacts to cutthroat trout spawning areas could occur in reaches of the upper Strawberry River tributaries due to abandonment and removal of diversion facilities. These actions should be evaluated in view of the draft Bonneville Cutthroat Trout Conservation Agreement, which is being developed.

19.53 **W 3-87 Left col., 2nd para. 3.5.6.3.1.1** A reference is made to the SOP's in chapter 1 of the DEIS. The SOP's do not mention, address, or consider impacts of turbidity on spawning season or egg incubation for fish in the stream when DIC structures are removed from Strawberry Valley. Based on the vague information presented, we feel that instream construction could have significant impact on game fish and their habitat, and **disagree with the statement that there would be no significant impacts**, because of implementation of the SOP's. The DEIS does describe the impacts of removing the structures during spring and fall spawning seasons, but the decision of exactly when removal will occur is left unanswered. This does not need attention here, but should be brought up again in the final design phase and be made part of the Environmental Commitments Checklist (ECC).

19.54 **W 3-89 Right col., 2nd para.** The paragraph describing indirect benefits to Co-op, Clyde and other tributary creeks is clearer here in the DEIS than it was in the PDEIS, however, it is still unclear how improved conditions in the Strawberry River will provide fish refuge for fish trapped in tributaries during low-flow periods. Generally, fish will not recognize that flows will decrease in their stream and that they should move downstream, past any pools in their stream, to reach better flows in another stream.

19.55 **W 3-90 Section 3.5.6.3.2** The DEIS indicates possible impacts to leatherside chub habitat but does not fully discuss this issue. Additionally, the statement that leatherside chub are opportunistic and able to adapt to a variety of habitat is unknown. This statement implies that they might not be impacted as significantly as other species due to their "adaptability". Leatherside chub were so scarce in Heber Valley streams that they were probably **barely surviving**, rather than **adapting**, to the variety of habitat conditions that may not necessarily represent preferred conditions. These actions should be evaluated in view of the draft Leatherside Chub Conservation Plan, which is being developed.

19.56 **W 3-90 Left col., 2nd para.** Discrepancy between sources of information for the length of the **temperature equilibrium** zone again. Which WQ Tech. Report is correct?

19.57 **W 3-91 Left col., last para. 3.5.6.3.4 Change wording** from "support" a put-and-take fishery, to "continue" or "maintain" the put-and-take fishery, so reader will realize that the stream is already being managed as a put-and-take fishery.

19.58 Cont. ▼ **W 3-91 Section 3.5.6.3.3** The DEIS indicates impacts for invertebrates and amphibians would be the same as game fish species. This is questionable and needs further evaluation. In

19.51 Please see the Errata Summary for changes to : Section 3.5.5.2 on page W 3-85, and the References Section on pages R-3, and R-9.

19.52 Please see the Errata Summary for: Section 1.12.9.1 page W 1-69, and Section 3.5.6.3.1.1 page W3-87.

19.53 Please see the Errata Summary for: Section 1.12.9.1 page W 1-69, and Section 3.5.6.3.1.1 page W 3-87. Also please see the Aquatic Resources part of Appendix 1 in the FEIS.

19.54 Please see the errata summary for Section 3.5.6.3.1.2, page W 3-89.

19.55 Please see the Errata Summary for changes to Section 3.5.6.3.2.2 on page W 3-90. Little information is available concerning leatherside chub distribution and habitat preferences in the WCWEP and DRP impact area of influence. Therefore, a more detailed discussion of the potential impacts on leatherside chub and other non-game fish was not appropriate.

The draft Leatherside Chub Conservation Plan is not available for review. CUWCD will review this document when it becomes available and will consider it in developing the final design for the selected action.

19.56 Please see the response to Comment 19.42.

19.57 Please see the Errata Summary for changes to Section 3.5.6.3.4 on page W 3-91.

19.58 Section 3.5.6.3.3 on page W 3-91 of the Draft EIS addresses impacts on other aquatic resources from construction and operation of the Proposed Action. Section 3.5.6.3.3.1 on page W 3-91 states that the Proposed Action would not result in any impacts on other aquatic resources during construction for the same *reasons* described for game fish and their habitat, not that the impacts would be the same. The *reasons* include limited instream construction activities, SOPs for erosion control, and time of construction (as clarified in the response to Comment 19.18).

Section 3.5.6.3.3.2 on page W 3-91 of the Draft EIS, Impacts during Operation, states that elimination of transbasin diversion flows would decrease habitat available for other aquatic resources *similar* to that for game fish species. This statement refers to a reduction of flow, resulting in less overall aquatic habitat for game fish, non-game fish, and other aquatic resources. Conversely, providing supplemental instream flows to certain Heber Valley streams would increase overall aquatic habitat for game fish, non-game fish, and other aquatic resources.

Section 3.5.6.3.3.2 on page W 3-91 of the Draft EIS states that restored flows in the upper Strawberry River basin would *possibly* increase production of amphibians and improve habitat. This statement agrees with the comment that restored flows would not necessarily provide more habitat for amphibians.

Section 3.5.6.3.3 on page W 3-91 of the Draft EIS does not indicate that restored flows in the upper Strawberry River basin would provide more habitat for spotted frogs. Wetland gains in the upper Strawberry River Basin were not considered compensation for the loss of spotted frog habitat in Heber Valley. Additional measures would be developed to restore any habitat that is not mitigated in Heber Valley under the SOPs as discussed in Section 3.19.4 on page W 3-171 of the Draft EIS.

19.58 Cont. addition, providing restored flows in the upper Strawberry River basin does not necessarily provide more habitat for amphibians, particularly for spotted frog, as indicated in the DEIS.

19.59 **W 3-92 3.5.6.4.1.1, 3.5.6.4.2.1, and 3.5.6.4.3.1.** These three sections refer back to section 3.5.6.3.1.1, which we feel does not adequately address impacts to aquatic resources.

19.60 **W 3-95 Right col., 1st para.** The first complete sentence is not a correct statement on turkey, pheasant and quail distribution in upper Strawberry Valley (they're not there).

19.61 **W 3-97 Left col., last bullet.** We recommend the use of raptor-safe power poles to eliminate or minimize the loss of birds by electrocution. This comment also applies to section 3.6.6.3.2.2.

19.62 **W 3-101** A reduction in instream flows by the Proposed Alternative in the Provo River between Jordanelle and Deer Creek may impact the natural ponds and wetlands that exist along the river.

19.63 **W 3-102 Left col., last sentence. 3.7.5.** Jordanelle River should be Jordanelle Dam.

19.64 **W 3-105 Left col., 3rd para. 3.7.5.5** The DEIS now states that past rotenone projects in Strawberry Valley killed the spotted frogs. The UDWR contracted Peter Hovingh to survey the amphibian population on Strawberry valley before the rotenone project of 1991. He found no ranid species in the valley. His paper "Amphibian and Wetland Survey and Analysis of the Strawberry River Drainage in Wasatch County, Utah" (Dec. 12 1988), summarizes his survey and analyzes the effects of rotenone on amphibians. He concluded that "use of rotenone in this drainage during August through October will not permanently affect the population of amphibians..." The 1987 EA for the Strawberry Reservoir Treatment Project stated: "The western spotted frog (Rana pretiosa)...is considered rare in Utah and its status in Strawberry Valley has not been documented." Other supporting papers include: Hovingh. P. 1987. *Investigations of Great Basin springs and wetlands for leeches, molluscs, and amphibians*. Proc. Bonneville chapter of Amer. Fish. Soc. Annual Meeting, pages 27-40, and Turner, F.D. 1962. *An analysis of geographic variation and distribution of Rana pretiosa*. Am. Phil. Soc. Yearbook 1962: 325-328. Spotted frogs are not native to the Colorado River Basin. We recommend re-writing the paragraph and just stating that: "There is a lack of historical sightings of spotted frog in the Strawberry River basin." (We had commented that wording in the PDEIS implied that spotted frogs are automatically found in the Strawberry River basin because of elevation.)

19.65 Cont. **W 3-106 Section 3.7.6.3.5,** The DEIS indicates due to lack of historic sightings, there would be no impact on spotted frog in the Heber Valley wetlands. If these have been previously occupied or are potential reintroduction sites, loss of these wetlands could further hinder recovery of the spotted frog. A net increase of wetlands in the Upper Strawberry River drainage does not offset the loss of vital and potential spotted frog habitat in the Heber

19.59 Please see the Errata Summary for: Section 1.12.9.1 page W 1-69, and Section 3.5.6.3.1.1 page W 3-87. Also please see the Aquatic Resources part of Appendix 1 in the FEIS.

Please see the responses to Comments 19.54, 19.55 and 19.58, which provide additional clarification.

19.60 Please see the Errata Summary for changes to Section 3.6.5.1.2 on page W 3-95.

19.61 Please see the Errata Summary for changes to Section 3.6.6.3.2 on page W 3-97, Section 3.6.6.3.2.2 on page W 3-98 and Section 1.12.9.1 on page W 1-73.

19.62 The change in Provo River streamflows caused by the Proposed Action between Jordanelle and Deer Creek reservoirs would be minor and would not cause measurable impacts on natural ponds and wetlands along the river.

19.63 Please see the Errata Summary for changes to Section 3.7.5 on page W 3-102.

19.64 Please see the response to Comment 6.10.

19.65 Potential groundwater elevation drawdown resulting from operation of the Proposed Action is not expected to impact spotted frogs or their habitat for the following reasons:

- Areas currently known to be inhabited by spotted frogs would not be affected by groundwater elevation drawdown, as discussed in the response to Comment 19.58.
- The only habitat historically known to be inhabited by spotted frogs near the area of potential groundwater elevation drawdown is a stock pond in which the species has not been documented for several years. The stock pond is considered to have marginal habitat for spotted frogs. Examination of a 1992 aerial photograph indicates that the stock pond is located outside of and below the area of potential groundwater elevation drawdown, within the Provo River floodplain, which would not be indirectly affected by the Proposed Action. The location of the stock pond southeast of the regional wastewater treatment facility as shown on Map A-4 (see map pocket of the Draft EIS) is incorrect because the wetland polygons originated from a non-rectified aerial photograph that was superimposed on the map. The open water designated on Map A-4 is actually located west of the line indicating potential groundwater elevation drawdown of more than 2 feet. Therefore, no impacts are expected to occur on spotted frog or their habitat.
- No other ponds are located within the area of potential groundwater elevation drawdown.
- A field trip was conducted on August 16, 1996 with representatives of CUWCD, U.S. Fish and Wildlife Service, Utah Division of Wildlife Resources and the Mitigation Commission to view these areas. The representatives concurred that the habitat in question was not spotted frog habitat and is used for livestock grazing and hay production.

If one of the DRP alternatives are selected for implementation, all of their impacts would be mitigated as discussed on page W 3-171 and W 3-172 in Section 3.19.4 of the Draft EIS. In addition, the CUWCD is aware of the spotted frog conservation plan that is currently being designed and is committed to supporting the plan and to coordinating with the Spotted Frog Conservation Agreement Team. This includes conducting surveys where necessary, identifying measures to avoid impacts, and implementing such measures as can be included in the Conservation Agreement.

19.65 Cont. Valley. This project, as it is described will have significant and possibly irreversible negative impacts on the spotted frog. Furthermore, we disagree with the summary comments listed in table 3-36 on page W 3-107 for alternatives.

19.66 **W 3-106 Right col., 2nd para. 3.7.6.3.5** The WCWEP/DRP DEIS states "...the Proposed Action would have **no direct or indirect impacts on spotted frogs or their habitat."** **THIS IS A MAJOR CHANGE FROM THE PDEIS!** The DEIS does identify wetland impacts in the long term due to groundwater withdrawal on a 20.7 acre site near the sewage lagoon (page W 3-71, Section 3.4.6.3, also Map A-4). This is known occupied frog habitat, but the DEIS states that spotted frogs are not located on any affected areas of the Proposed Action. Further, we believe that mitigation (net increase in wetland habitat in Strawberry Valley) for impacts to spotted frogs should not be credited to the Strawberry Valley, since our earlier argument that spotted frogs are not native to the Colorado river basin, nor were they observed in surveys.

19.67 **W 3-107 Table 3-36.** Please clarify what kind of peregrine falcon habitat is lost or benefitted (20.7 acres of what? cliffs for peregrine nesting? marsh for prey species? Insert "wetlands" or "marsh" for peregrine acres, "riparian" for bald eagle acres, and "wetland" for ladies'-tresses). The table would be a useful summary if the reader didn't have to go back to the text to find out what the table means.

19.68 **W 3-107 Table 3-36. We do not agree that there will be no net change for spotted frog,** caused by actions (DRP with Pipeline and DRP with Canal) which result in taking, increased stress, displacement and potential reduced reproductive success in spotted frog populations which are already below critical levels.

19.69 **W 3-109 Section 3.7.6.4.5** Impacts as described under these alternatives are unacceptable and measures should be taken to prevent the type of loss to spotted frog as described under these alternatives.

19.70 **W 3-109 Section 3.7.6.5.5** Impacts as described under these alternatives are unacceptable and measures should be taken to prevent the type of loss to spotted frog as described under these alternatives.

19.71 **W 3-109 Left col., 3rd para. 3.7.6.4.5 Could impacts to spotted frog be avoided by putting the pipeline in the old US highway 40 road alignment or ROW, or east of the road alignment? or could they be minimized by putting the pipeline along the east border of spotted frog habitat, rather than right through the middle of spotted frog habitat?** We do not recall if there has been any discussion on the alignment of the project through this habitat area; Map A-2 of the PDEIS showed pipeline alignments along old Highway 40 rather than through wetlands west of the old highway (map 3-8, page W 3-110), and the PDEIS project descriptions did not describe impacts to wetlands inhabited by spotted frog.

19.66 The PDEIS was a preliminary document subject to change. Based on additional analysis, the results were revised in the Draft EIS. Please see the response to Comment 19.65 for a discussion of why the Proposed Action is not expected to impact spotted frogs or their habitat.

Mitigation for spotted frog habitat would not be necessary for the Proposed Action but could be necessary for the DRP With Pipeline Alternative, as addressed in the responses to Comments 19.65 and 19.58. Such mitigation would not be "credited to the Strawberry Valley" as stated in the comment.

19.67 Please see the Errata Summary for changes to Table 3-36 on page W 3-107.

19.68 Please see the response to Comment 19.69.

19.69 Measures to minimize or avoid impacts described under the alternatives are discussed on pages W 3-171 and W 3-172 in Section 3.19.4 of the Draft EIS. These measures would be implemented in accordance with the Spotted Frog Conservation Agreement Team conservation plan.

19.70 Please see the response to Comment 19.69.

19.71 The pipeline location was modified early in the planning process to minimize the amount of impact on spotted frog habitat. The current location of the pipeline alignment is immediately adjacent to the old Highway 40 right-of-way road bed. The description of the alignment is provided in Sections 3.4.6.4 (pages W 3-74 and W 3-77) and 3.4.6.5 (pages W 3-77 and W 3-78) of the Draft EIS.

The pipeline alignment is shown correctly on page W 3-110, Map 3-8 of the Draft EIS. Impacts also are described accurately in Sections 3.7.6.4.5 (page W 3-109) and 3.7.6.5.5 (page W 3-109) and were measured in the field. The confusion may be with Map 3-8 which erroneously shows the location of the existing old Highway 40. The old Highway 40 should be shown on the west side of the pipeline alignment. The location of the old Highway 40 shown on the map is the original Highway 40 that was abandoned years ago. Please see the Errata Summary for changes to Map 3-8, page W 3-110.

19.72 **W 3-131 Section 3.2.6.3.5 Jordanelle and Deer Creek, Second paragraph.** This paragraph indicates that storage space will be provided in Jordanelle and Deer Creek Reservoirs for conserved water. There is no mechanism in place to store this water in these reservoirs.

Third paragraph. The last sentence indicates that Bonneville Unit CUP water will be released from Jordanelle to avoid negative impacts to downstream users. Who will require the releases and how will it be regulated to protect downstream users?

19.73 **W 3-160 Right col., top para. Stocking of Daniels Creek.** Please change wording 7,500 fish "over the summer months,...." to 7,500 fish "when flows are adequate,...." Stocking of Daniels Creek would be adjusted, so that fish are stocked when flows are sufficient to support fish. Stocking may begin earlier in the spring than has occurred in the past, and will probably not last as far into the summer, because of reduced flows.

19.74 **W 3-161 Section 3.16.6.3.4 Impact Summary, First paragraph.** Typo error, trespassing in last sentence.

19.75 **W 3-171 Section 3.19.4** This section discusses conservation efforts to prevent mortality of spotted frog during construction. We agree that conservation measures should focus on avoiding impacts to occupied and potentially occupied habitats. Translocation of frogs should only be a conservation effort used to move frogs out of "harms way" once an unavoidable impact become certain, not as a action used to remove frogs so that the project can occur. The statement that monitoring efforts have not been occurring on past relocation efforts is inaccurate. Areas where frogs have been translocated have been monitored annually during the breeding season.

19.76 **W 3-173 Section 3.20.2,** Deer Creek Reservoir is also a downstream user and CUWCD water should also be used to make Deer Creek Reservoir whole whenever Deer Creek Reservoir storage is adversely impacted by the projects.

B.2.1 As stated in the general comments, the model assumptions, methodologies, and results are not endorsed or in any way approved or accepted by the Division of Water Rights.

The Committee appreciates the opportunity to review this proposal. Please direct any other written questions regarding this correspondence to the Utah State Clearinghouse at the above address or call Carolyn Wright at (801) 538-1535 or John Harja at (801) 538-1559.

Sincerely,

Brad T. Barber
State Planning Coordinator

BTB/ar

19.72 No mechanism is presently in place to store conserved water in Jordanelle Reservoir. However, as stated in Section 1.6.1 on page W 1-9 and Section 1.6.2 on page W 1-14, water right change applications would be required and a river operational procedure would be developed to determine the quantity and timing of releases needed to avoid water supply impacts on downstream users.

The Provo River Commissioner would require releases of water from Jordanelle Reservoir to protect downstream users in accordance with the water right change applications and the new operational procedure. Please see the responses to Comments 17.1, 17.2, 17.3, 17.4, 17.6, 17.7, 18.1, 18.2 and 18.3 and Section 3.2 of this Final EIS for additional information related to the topics of conserved water, river operations and how impacts on downstream water users would be avoided.

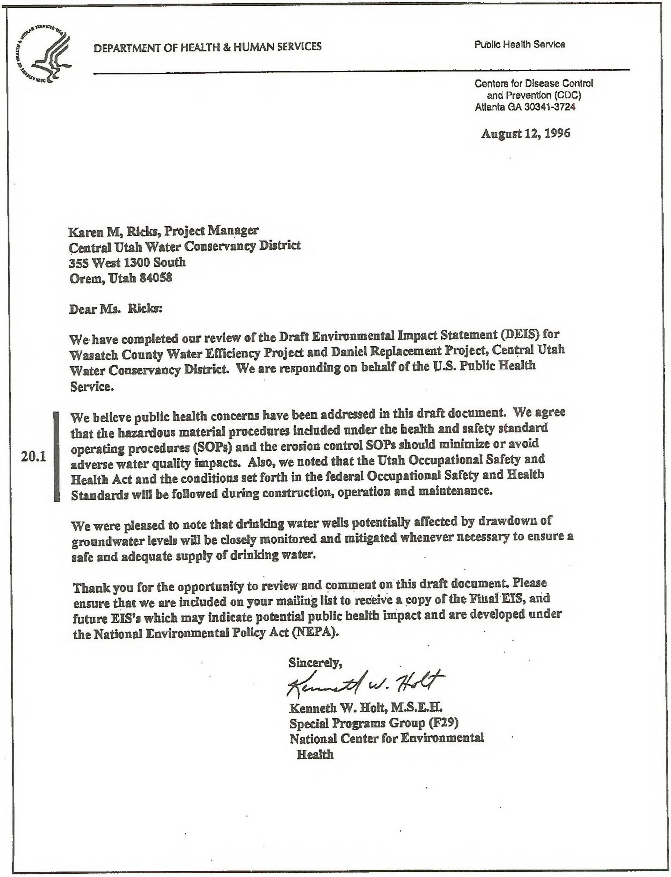
19.73 Please see the Errata Summary for changes to Section 3.16.6.3.1 on page W 3-160.

19.74 Please see the Errata Summary for changes to Section 3.16.6.3.4 on page W 3-161.

19.75 The success of past relocation efforts cannot be determined since the spotted frogs that were released were not marked. Although the Utah Division of Wildlife Resources annually monitors areas where frogs were translocated, the agency has no way of ascertaining whether the frogs present are naturally occurring or are translocated individuals. Therefore, the success of these efforts cannot be verified. Because of the uncertainty of the success of relocation efforts, mitigation for the DRP alternatives as described in Section 3.19.4 on pages W 3-171 and W 3-172 has focused on minimizing and avoiding impacts wherever possible, and as recommended by the comment, translocating frogs from impact areas only if unavoidable impacts become certain.

19.76 The Proposed Action and DRP alternatives have been designed to make Deer Creek Reservoir whole. This is important to achieve one of the project purposes stated in Section 1.2.2 on page W 1-2: To protect the rights of downstream water users. Please see the Errata Summary for changes to Section 1.6.1 on page W 1-9, which explains how releases from Jordanelle Reservoir would be used to avoid impacts on downstream water users. These same releases would keep Deer Creek Reservoir whole. Please see the responses to Comments 17.1, 17.2, 17.3, 17.4, 17.6, 17.7, 18.1, 18.2 and 18.3 and Section 3.2 of this Final EIS for additional information related to the topics of how impacts on downstream water users would be avoided, how water would be conserved, and changes in river operations.

Comment Letter No. 20



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30341-3724

August 12, 1996

Karen M, Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058

Dear Ms. Ricks:

We have completed our review of the Draft Environmental Impact Statement (DEIS) for Wasatch County Water Efficiency Project and Daniel Replacement Project, Central Utah Water Conservancy District. We are responding on behalf of the U.S. Public Health Service.

20.1 We believe public health concerns have been addressed in this draft document. We agree that the hazardous material procedures included under the health and safety standard operating procedures (SOPs) and the erosion control SOPs should minimize or avoid adverse water quality impacts. Also, we noted that the Utah Occupational Safety and Health Act and the conditions set forth in the federal Occupational Safety and Health Standards will be followed during construction, operation and maintenance.

We were pleased to note that drinking water wells potentially affected by drawdown of groundwater levels will be closely monitored and mitigated whenever necessary to ensure a safe and adequate supply of drinking water.

Thank you for the opportunity to review and comment on this draft document. Please ensure that we are included on your mailing list to receive a copy of the Final EIS, and future EIS's which may indicate potential public health impact and are developed under the National Environmental Policy Act (NEPA).

Sincerely,

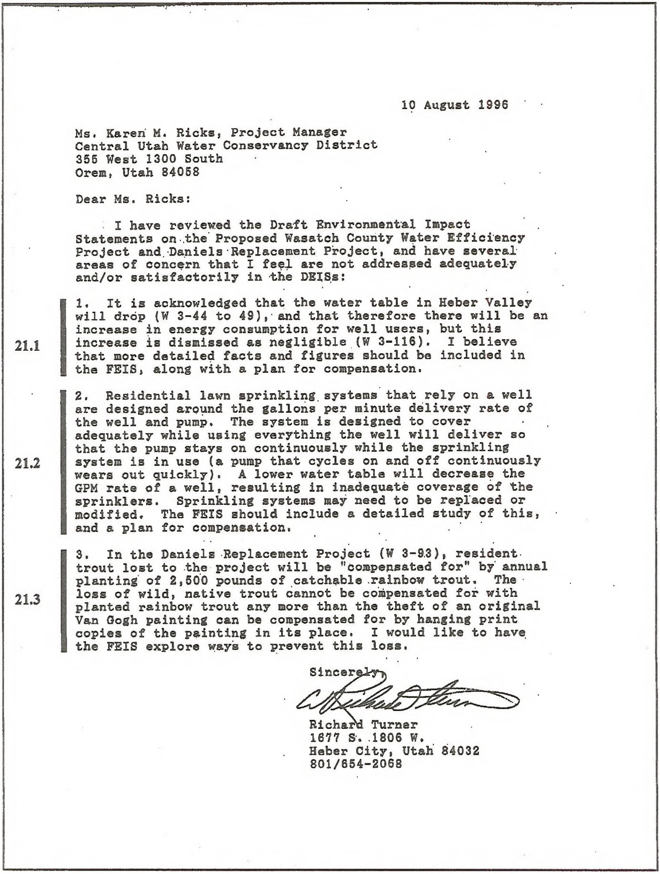
Kenneth W. Holt

Kenneth W. Holt, M.S.E.H.
Special Programs Group (F29)
National Center for Environmental
Health

Responses to Comment Letter No. 20

20.1 Thank you for your comment.

Comment Letter No. 21



10 August 1996

Ms. Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058

Dear Ms. Ricks:

I have reviewed the Draft Environmental Impact Statements on the Proposed Wasatch County Water Efficiency Project and Daniels Replacement Project, and have several areas of concern that I feel are not addressed adequately and/or satisfactorily in the DEISs:

21.1 1. It is acknowledged that the water table in Heber Valley will drop (W 3-44 to 49), and that therefore there will be an increase in energy consumption for well users, but this increase is dismissed as negligible (W 3-116). I believe that more detailed facts and figures should be included in the FEIS, along with a plan for compensation.

21.2 2. Residential lawn sprinkling systems that rely on a well are designed around the gallons per minute delivery rate of the well and pump. The system is designed to cover adequately while using everything the well will deliver so that the pump stays on continuously while the sprinkling system is in use (a pump that cycles on and off continuously wears out quickly). A lower water table will decrease the GPM rate of a well, resulting in inadequate coverage of the sprinklers. Sprinkling systems may need to be replaced or modified. The FEIS should include a detailed study of this, and a plan for compensation.

21.3 3. In the Daniels Replacement Project (W 3-93), resident trout lost to the project will be "compensated for" by annual planting of 2,500 pounds of catchable rainbow trout. The loss of wild, native trout cannot be compensated for with planted rainbow trout any more than the theft of an original Van Gogh painting can be compensated for by hanging print copies of the painting in its place. I would like to have the FEIS explore ways to prevent this loss.

Sincerely,

Richard Turner
1677 S. 1806 W.
Heber City, Utah 84032
801/654-2068

Responses to Comment Letter No. 21

21.1 The increase in energy consumption was not "dismissed as negligible", but was determined to not be significant. The groundwater levels shown in the Draft EIS were estimated from the best available data. Map 3-5 (page W 3-37) is therefore the most detailed figure that can be provided at this time. It is not possible to determine exactly which wells would be impacted by the Proposed Action. However, as stated in Section 3.2.6.3, 3.2.6.3.7 (page W 3-49) and 3.19.2 (pages W 3-170 and W 3-171), a reserve fund would be set aside by CUWCD for monitoring groundwater levels to determine which wells are impacted by the Proposed Action. Monitoring would begin "before construction of the Proposed Action and for 6 years after it becomes operational to determine which wells would be affected". CUWCD will mitigate for affected wells that could include re-drilling the wells or providing a connection to a domestic water distribution system or providing alternative water supplies.

21.2 Please see the response to comment 6.6. In addition, see Section 1.3.2 (page W 1-4), Section 1.8.6.2 (page W 1-49) and Section 3.1.2.2 (page W 3-7) of the DEIS, that discuss the Heber City Secondary System, which could serve as an alternative water supply.

21.3 The comment is correct in stating that the loss of naturally producing trout in Daniels Creek can not be compensated for by stocking of hatchery fish. Please see the response to Comment 16.17 and Errata Summary for changes to Section 3.19.3 on page W 3-171, page W 3-88, Section 3.5.6.3.4 on page W 3-91, and page W 3-93.

Comment Letter No. 22

United States
Department of
Agriculture

Natural Resources
Conservation
Service

P.O. Box 11350
Salt Lake City, UT 84147
Phone: (801) 524-5051

August 12, 1996

Karen M. Ricks, Project Manager
Wasatch County Water Efficiency Project
Central Utah Water Conservancy District
355 West 1300 South
Orem, UT 84058

Dear Karen:

The Natural Resources Conservation Service (NRCS) appreciates the cooperation, dialog and data sharing from Central Utah Water Conservancy District (CUWCD). In general, the NRCS concurs in the analyses presented in the Wasatch County Water Efficiency Project (WCWEP) Draft Environmental Impact Statement (DEIS). Along with other resource agencies, we have been involved in the planning and coordination of the WCWEP in conjunction with the Tri-Valley Watershed Project. The NRCS supports the WCWEP. We have the following comments:

22.1 Section S.3.3.2 Non-Federal Cost Sharing: Last sentence states that "The cost sharing requirements associated with 202 and 207 would be met". More information is needed on who will meet.

22.2 Section 1.3.2, 1st paragraph: Text states "Although not part of the Proposed Action, on-farm conversion to sprinkler irrigation systems would occur" and Section 3.1.2, last paragraph, states, "all of the analysis ...was conducted assuming the on-farm improvements are implemented." It would clarify the Environmental Consequences in Chapter 3 if the Introduction (3.1) stated, "The purposes of this chapter are to describe...resources that would be impacted by the Proposed Action plus the on-farm improvement that will be installed through the Tri-Valley Watershed..."

22.3 Section 1.7.1.2.1, 2nd paragraph: Instead of saying "(not including projects in Midway)", the first sentence of this paragraph should read, "As of May, 1996,.....construction in Heber Valley excluding the town of Midway."

22.4 Cont. Section 1.7.1.2.3: States the Tri-Valley Watershed Plan is scheduled for completion in 1996. The Draft Watershed Plan/Environmental Assessment should be completed in 1996 but the Final may not be completed until early 1997. Since the fact that the projects are voluntary is stated in the 7th line, the phrase "which would be voluntary and take longer to implement" in the

NRCS Utah: Commitment from the Ground Up!

The Natural Resources Conservation Service,
formerly the Soil Conservation Service, is an agency of the
United States Department of Agriculture

Responses to Comment Letter No. 22

22.1 Funding for the WCWEP and DRP would be provided under Sections 202, 207 and 303 of CUPCA. The WCWEP and DRP are estimated to cost $40,899,446. Of this total amount, $30,682,621 would be federally funded under sections 202, 207, and 303 of CUPCA, and $10,216,825 would be locally funded. Table 4-6 in the WCWEP feasibility study (which is available on request) summarizes the cost allocation of the project by funding source and purpose. Funding for the HCSS is undetermined at this time. Funding for on-farm improvements could be provided through the NRCS under P.L. 83-566. Funding for each of these projects is separate and independent from the others.

22.2 Please see the Errata Summary for changes to Section 3.1 on page W 3-1.

22.3 Please see the Errata Summary for changes to Section 1.7.1.2.1 on page W 1-16.

22.4 Please see the Errata Summary for changes to Section 1.7.1.2.3 on page W 1-17.

22.4 Cont. 19th and 20th line and "in the voluntary portions of the plan" in the 23rd line should be removed. The sentence starting in line 22 should be changed to read, "Based on experience in similar projects, NRCS expects participation in the water quality elements to increase after the effects of the demonstration project are observed by local people."

22.5 Section 1.8, 2nd paragraph: Section 303 funds and Section 202 and 207 funds don't mean much to anyone not familiar with the Central Utah Project Completion Act.

22.6 Section 1.8.4.1 Description of Facilities: 6th paragraph Figure 1-7, schematic on next page W 1-42. Recommend including screening devices for moss. You may need structures to remove sediment from the water as well.

22.7 Section 1.11: Statement after the 8th bullet, "The Mitigation Commission..." does not fit the introductory statement, "no changes in the following."

22.8 Section 3.1: The "Introduction" would be a good place to define baseline conditions.

22.9 Section 3.1.2.1.2, 2nd paragraph: In the 11th line delete, "in Round Valley (Wallsburg) and".

22.10 Section 3.1.2.2 Don't see the acronym HCSS written out prior to using it.

22.11 Section 3.2.5.4.2, 2nd paragraph: Reference is made to three ditches and one creek. The next sentence refers to "These creeks". The text should either say "These ditches and creeks" or explain that what are referred to as ditches are actually creeks.

22.12 Section 3.3.5.2.2: Second reference to a table should be "3-20" instead of "3-19".

22.13 Section 3.2.5.8.3: Wells & Springs--Third sentence seems unclear because of the words "Total pumping by all of the wells." We assume you mean pumping of each of the 640 active wells averages 1.2 cfs or 870 acre-feet per year.

22.14 Section 3.3.6.1, 2nd paragraph: It would be more accurate to state "Since there are no numeric standards" NRCS will be using the narrative standard for TSS. Also, there is a "pollution indicator" for P in the state standards.

22.15 Cont. Section 3.11.6.2, 3rd paragraph: Text states that "on a per acre basis, the total amount of water used by municipal and industrial uses approximates the total used by agriculture." This should be more specific. Does it refer to industrial use as well as municipal (household or culinary use would be more descriptive)?

22.5 Section 1.4.1 (page W 1-18) describes the statutory background of CUPCA and specifically the funding of WCWEP and DRP through Sections 202, 207, and 303. Also please refer to the response to comment 22.1

22.6 Draft EIS Figure 1-7 on page W 1-42 is a general, simplified representation of a pumping station. Detailed items, such as screening or sediment removal structures, will be included in the final design.

22.7 Please see the Errata Summary for changes to Section 1.11 on page W 1-56.

22.8 In Chapter 3 of the Draft EIS, each section clearly identifies the baseline conditions (affected environment) that were used to determine impacts of the proposed project. For example, Section 3.2.5.1 on page W 3-12 of the Draft EIS goes into some depth explaining the baseline conditions for water supply availability and how they were obtained. Another example can be found in Section 3.11.5 on page W 3-122 of the Draft EIS. This explains that the agriculture baseline conditions are not the same as the existing conditions. The agriculture section goes on to explain how baseline conditions were determined and they are described. The methodology appendix (Appendix B) in the Draft EIS also provides information on how the baseline conditions were determined. See also Section 3.2 of this document.

22.9 Please see the Errata Summary for changes to Section 3.1.2.1.2 on page W 3-6.

22.10 The acronym HCSS, which stands for Heber City Secondary System, is first used and described in Section 3.1.2 in the first paragraph on page W 3-5. This is prior to use of the acronym in Section 3.1.2.2.

22.11 Please see the Errata Summary for changes to Sections 3.2.5.4.2 and 3.2.5.4.2.1 on page W 3-19.

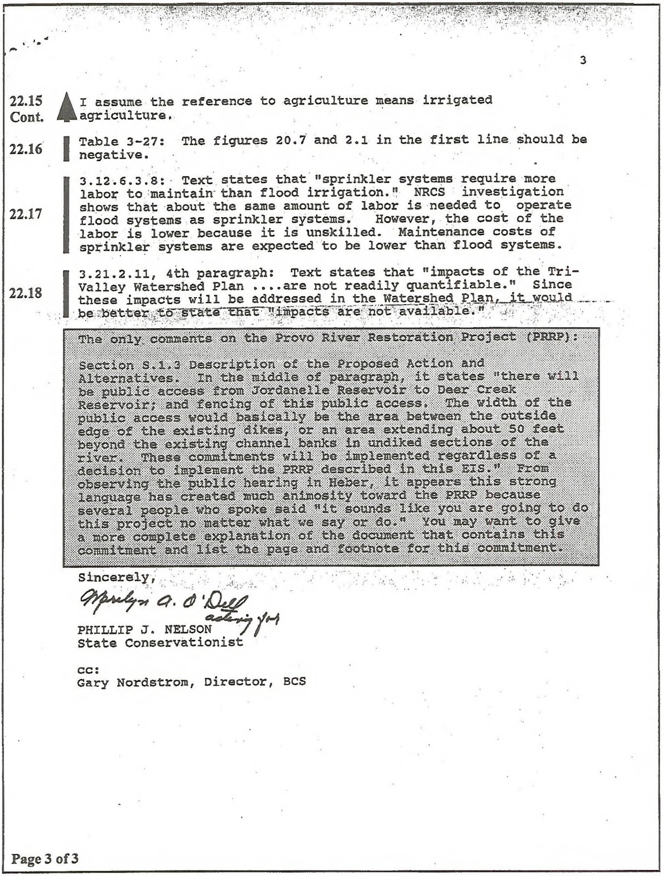
22.12 Please see the Errata Summary for changes to Section 3.3.5.2.2 on page W 3-58.

22.13 Please see the Errata Summary for Section 3.2.5.8.3, page W 3-25.

22.14 Please see the Errata Summary for changes to Section 3.3.6.1 on page W 3-60.

22.15 Please see the Errata Summary for changes to Section 3.11.6.2, page W 3-123. The reference to municipal and industrial uses refers to both indoor or outdoor use as well as industrial uses.

The assumption stated in Comment 22.15 is correct.



22.15 Cont. I assume the reference to agriculture means irrigated agriculture.

22.16 Table 3-27: The figures 20.7 and 2.1 in the first line should be negative.

22.17 3.12.6.3.8: Text states that "sprinkler systems require more labor to maintain than flood irrigation." NRCS investigation shows that about the same amount of labor is needed to operate flood systems as sprinkler systems. However, the cost of the labor is lower because it is unskilled. Maintenance costs of sprinkler systems are expected to be lower than flood systems.

22.18 3.21.2.11, 4th paragraph: Text states that "impacts of the Tri-Valley Watershed Plan ....are not readily quantifiable." Since these impacts will be addressed in the Watershed Plan, it would be better to state that "impacts are not available."

The only comments on the Provo River Restoration Project (PRRP):

Section S.1.3 Description of the Proposed Action and Alternatives. In the middle of paragraph, it states "there will be public access from Jordanelle Reservoir to Deer Creek Reservoir; and fencing of this public access. The width of the public access would basically be the area between the outside edge of the existing dikes, or an area extending about 50 feet beyond the existing channel banks in undiked sections of the river. These commitments will be implemented regardless of a decision to implement the PRRP described in this EIS." From observing the public hearing in Heber, it appears this strong language has created much animosity toward the PRRP because several people who spoke said "it sounds like you are going to do this project no matter what we say or do." You may want to give a more complete explanation of the document that contains this commitment and list the page and footnote for this commitment.

Sincerely,

Marilyn A. O'Dell
acting for
PHILLIP J. NELSON
State Conservationist

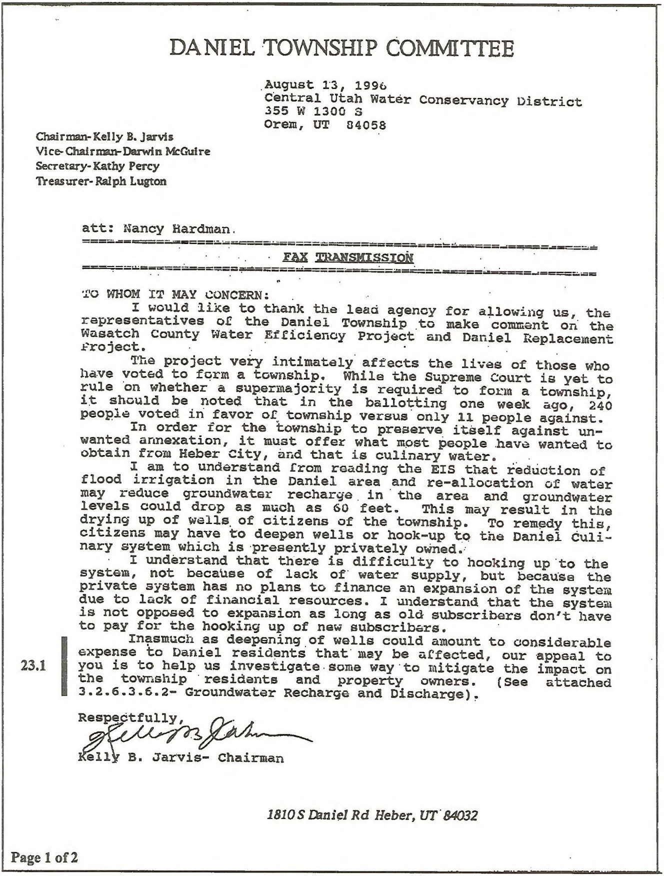
cc:
Gary Nordstrom, Director, BCS

22.16 Please see the Errata Summary for changes to page W 3-72, Table 3-27; page W 3-78, Table 3-28; and page W 3-79, Table 3-29.

22.17 Please see the Errata Summary for changes to Section 3.12.6.3.8 on page W 3-141.

22.18 Please see the Errata Summary for changes to Section 3.21.2.11 on page W 3-180.

Comment Letter No. 23



DANIEL TOWNSHIP COMMITTEE

August 13, 1996
Central Utah Water Conservancy District
355 W 1300 S
Orem, UT 84058

Chairman- Kelly B. Jarvis
Vice-Chairman- Darwin McGuire
Secretary- Kathy Percy
Treasurer- Ralph Lugton

att: Nancy Hardman.

FAX TRANSMISSION

TO WHOM IT MAY CONCERN:

I would like to thank the lead agency for allowing us, the representatives of the Daniel Township to make comment on the Wasatch County Water Efficiency Project and Daniel Replacement Project.

The project very intimately affects the lives of those who have voted to form a township. While the Supreme Court is yet to rule on whether a supermajority is required to form a township, it should be noted that in the ballotting one week ago, 240 people voted in favor of township versus only 11 people against.

In order for the township to preserve itself against unwanted annexation, it must offer what most people have wanted to obtain from Heber City, and that is culinary water.

I am to understand from reading the EIS that reduction of flood irrigation in the Daniel area and re-allocation of water may reduce groundwater recharge in the area and groundwater levels could drop as much as 60 feet. This may result in the drying up of wells of citizens of the township. To remedy this, citizens may have to deepen wells or hook-up to the Daniel Culinary system which is presently privately owned.

I understand that there is difficulty to hooking up to the system, not because of lack of water supply, but because the private system has no plans to finance an expansion of the system due to lack of financial resources. I understand that the system is not opposed to expansion as long as old subscribers don't have to pay for the hooking up of new subscribers.

23.1 Inasmuch as deepening of wells could amount to considerable expense to Daniel residents that may be affected, our appeal to you is to help us investigate some way to mitigate the impact on the township residents and property owners. (See attached 3.2.6.3.6.2- Groundwater Recharge and Discharge).

Respectfully,
Kelly B. Jarvis
Kelly B. Jarvis- Chairman

1810 S Daniel Rd Heber, UT 84032

Responses to Comment Letter No. 23

23.1 Please see the response to Comment 6.6.

Comment Letter No. 23

The lowered average storage levels are the result of changes in the timing of storage and release of water from the reservoirs under the Proposed Action. The Proposed Action would increase the efficiency of water use in Heber Valley, thus reducing diversion requirements and conserving water in the valley. However, the ability to store conserved water in Jordanelle Reservoir is limited because the conserved water would be available during the months of high runoff and storage levels. This storage limitation along with a change in timing of return flows from the Heber Valley groundwater basin would cause the Proposed Action to lower Jordanelle Reservoir levels compared to baseline conditions. There would be an increase in flow in the Provo River between Jordanelle and Deer Creek reservoirs under the Proposed Action during the spring and early summer as compared to baseline because of a reduction in diversion from the Provo River. Compared to baseline conditions, the return flows from the Heber Valley groundwater basin under the Proposed Action would be less during the summer and fall when demands are at their highest downstream of Deer Creek Reservoir. Additional releases from Jordanelle Reservoir would be required during the summer and fall under the Proposed Action to avoid reductions in deliveries to downstream users and to meet water right storage requirements in Deer Creek Reservoir.

Under the Bonneville Unit M&I System Final Supplement to Final Environmental Statement (USBR 1987), both reservoirs were expected to be drawn down to their minimum pool levels (a combined system storage of 6,000 acre-feet) during an extended, critically dry period. Modeled Jordanelle Reservoir water levels are within the range identified in the M&I Final Supplement. Reductions in CUP agricultural deliveries would occur during critical periods to allow greater use of reservoir storage during non-critical periods.

3.2.6.3.6 Groundwater Resources. The following subsections describe impacts on groundwater resources under the Proposed Action.

3.2.6.3.6.1 Groundwater Recharge and Discharge. The Proposed Action would reduce groundwater recharge from baseline in Heber Valley by an annual average of about 20 percent, or 18,759 acre-feet per year (see Table 3-15). This would be caused by a reduction in applied irrigation water, which would reduce the amount of water that would percolate into the aquifer. About 20 percent less groundwater would return to the surface as discharge. The tota groundwater discharge in the valley would be redu on an annual average basis, but discharge would increase locally in the summer from supplementa instream flow seepage and additional Daniels Cre channel seepage. Groundwater basin discharge wou be reduced throughout the valley from 1 percent (Snake Creek return flows) to 39 percent (local drains and seeps not associated with hillside outflow).

During wet years, recharge and discharge would be reduced by 20 percent on an annual average basis (19,500 acre-feet per year). Under the Proposed Action, annual dry-year discharge would be reduced to about 15,600 acre-feet.

As shown in Figure 3-3 in Section 3.2.6.3.4, total inflow to Deer Creek Reservoir is about the same under the Proposed Action as under baseline conditions. This is because the reduction in groundwater return flow is offset by a comparable increase in surface flow from streams receiving supplemental water and an increase in undiverted Provo River flow.

The annual average groundwater discharge to Sprin Creek and the Upper Charleston and Sagebrush and Spring Creek canals would be about 39 percent low under the Proposed Action than discharge to these areas under baseline conditions. The increase in discharge to these areas under baseline conditions was modeled to be about 12 percent higher than existing conditions. The decrease in discharge to these areas under the Proposed Action would thus b about 33 percent lower than existing conditions.

3.2.6.3.6.2 Groundwater Levels. The Proposed Action would lower groundwater levels in some are of Heber Valley. The greatest change in groundwater levels, up to 60 feet lower than baselin conditions (42 feet lower than existing conditions) are expected in the southeast portion of the valley (see Map 3-5). This change would occur under the Timpanogos Irrigation Company where water level are currently 100 to 150 feet deep. Groundwater levels in the agricultural areas north and west of Heber City, and southeast of Spring Creek, would b about 2 to 8 feet lower than under baseline conditions.

The seasonal fluctuation in groundwater levels wou be more subdued than under baseline conditions because less water would be applied during summer.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

AUG 14 1996

Ref: 8EPR-EP

Ms. Karen M. Ricks
project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, UT 84058-7303

Re: Comments on Draft Environmental Impact Statement for the Wasatch County Water Efficiency Project, Daniel Replacement Project.

Dear Ms. Ricks:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Wasatch County Water Efficiency Project, Daniel Replacement Project. As you are aware we have participated in the development of this document for several years and have provided comments on previous documents and reports which support this document. EPA offers the following concerns and comments for your consideration as you complete the Final Environmental Impact Statement (FEIS) and your decision making process.

24.1 Our primary concern with the analysis is the conclusion that enhancement of existing wetland acreage, if successful, equals an increase in wetland acreage. We pointed out this concern in previous comments and had thought it was resolved at the end of our June 27th, 1996 field trip, but apparently that is not the case. Table 3-27 still equates wetland enhancement with wetland creation. Enhanced quality of wetlands in the Strawberry basin does not replace the loss of wetland acres in the Heber valley. All the tables in the wetland section of the DEIS need to be changed.

Based on the concern stated above, and the procedures EPA uses to evaluate the potential effects of proposed actions and the adequacy of the information in the DEIS, the proposed action presented in the DEIS will be listed in the Federal Register as a Category 2. This means that EPA believes the information pertaining to wetland impacts needs to be corrected to properly

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Responses to Comment Letter No. 24

24.1 CUWCD, DOI and the Mitigation Commission understand the concern with the wetlands analysis presented in the Draft EIS. Appropriate changes would have been made in the Draft EIS, however the June 27, 1996 field trip was held after the Draft EIS was filed with EPA on June 10, 1996. The comment is correct that enhanced wetland quality in the upper Strawberry River basin would not replace the loss of wetland acres in Heber Valley. The predicted loss of 20.7 acres of low function and value wet meadows (pasture and hay fields) caused by groundwater elevation drawdown in Heber Valley would be a significant impact, based on the significance criteria in Section 3.4.6.1 on page W 3-71. The lost wetlands would be changed from low function and value wet meadow habitat to upland habitat, unless the private landowners apply enough water to maintain the wetland plants and soils. The loss of these wetlands would not be mitigated because of their low function and value as wetlands. Please see the Errata Summary for changes to Section 3.4.6.3 on page W 3-71, Section 3.4.6.3.1 on page W 3-72, Section 3.4.6.3.6 on page W 3-74, and Section 3.20 on pages W 3-172 and W 3-173. Tables 3-27, 3-28 and 3-29 have been revised and are included in the Errata Summary. Additionally, the Summary section and Chapter 2 of the EIS have been revised in the Final EIS to incorporate relevant changes in the wetlands sections.

Comment Letter No. 24

reflect what is projected to occur. The FEIS should include this corrected information. This information is necessary to adequately address the differences between the alternatives. Please have your staff contact Dave Ruiter (303/312-6794) concerning the details of our comments.

Sincerely,

Dave Ruiter

for Carol Campbell, Director
Ecosystem Protection Program

cc: CUWCD, Provo

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Member Groups:

Audubon Council of Utah
High Country Flyfishers
Salt Lake Fish & Game Assoc.
Sportsmen for Fish & Wildlife
Stonefly Society Chapter of Trout Unlimited
Sundance
Utah Rivers Conservation Council
Utah Chapter, The Sierra Club

UTAH OUTDOOR INTEREST
COORDINATING COUNCIL
Jeffrey W. Appel, OCL and Executive Director
9 Exchange Place, Suite 1100
Salt Lake City, Utah 84111

Tel: (801)532-1252
Fax: (801)532-1278

August 20, 1996

Karen Ricks
Project Manager
WCWEP, PRRP and DRP
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

RE: UOICC Comments on WCWEP/PRRP/DRP

Dear Karen:

Please consider this letter as the cover letter for the comments recently submitted by several of the UOICC members on its behalf. We look forward to continued and heightened involvement in the NEPA process and on these projects. We would be happy to provide further explanation of any comments if questions arise. Thank you for the opportunity to participate in these important projects.

Very truly yours,

UTAH OUTDOOR INTEREST COORDINATING COUNCIL

Audubon Council of Utah

Julie Mack by Jeffrey Appel
Sundance

Darrell H Mensel
High Country Flyfishers

Zachary
Utah Rivers Conservation Council

Dan T. Potts
Salt Lake Fish & Game Assoc.

Utah Chapter, The ~~Sierra~~ Club

Patrick Milburn
Sportsmen for Fish & Wildlife
by Jeffrey Appel

Stonefly Society Chapter of
Trout Unlimited

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UOICC COMMENTS TO
DEIS
WCWEP & DRP

C/O
Karen M. Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, UT 84058

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WCWEP & DRP COVER LETTER

The UOICC is entirely in favor of the Proposed Action (Wasatch County Water Efficiency Project with Daniel Replacement Pipeline) if the suggestions mentioned herein are considered in the final design process and responded to in the Final Environmental Impact Statement. By completing the new diversion of water and the pressurized water delivery system, and supplementing flows in the 5 Heber Valley streams there will be great benefits for local agricultural interests, wildlife enthusiasts and stream fishermen over the years following the completion of the project.

25.1 The effect of the emplacement of Jordanelle Dam on the surface and ground water resources of the Heber Valley and perhaps downstream has been totally ignored in this product. Many assumptions and conclusions are made concerning the impact to surface and ground water resources, wetlands, etc., and they may all unravel or fail completely if this issue is not explored in detail. There is a great deal riding on the prediction of impacts to groundwater -- far too much to ignore this issue. As you know, this problem has been raised and discussed in a number of prior meetings.

25.2 Also, the approach concerning the Daniels Replacement water suffers from two faults. First, there is no reason to assume that the entire 2900 acre feet must be supplied to that company unless they can demonstrate that they have beneficially used that entire amount and that there has been no forfeiture. That inquiry must be undertaken by the District. Otherwise, a private company is being benefitted at public expense for something they may no longer own and rather important and expensive decisions are being made based upon faulty data.

25.3 Second, related to that issue is the necessity to explore in greater detail the Strawberry/Daniels pipeline as an alternative to supply the Daniels water rights. The draft Strawberry/Provo conveyance document issued May of 1995 and never finalized indicates this pipeline would only cost $14 million to transfer 3,000 acre feet. In any event, there has been no hard look with respect to other alternatives to the replacement pipeline.

25.4 A general assumption throughout this document is that the projects have nothing to do with the growth patterns in the Heber Valley. To the contrary, some discussion must occur with respect to the use of the system as a facilitator of growth, either through a secondary system or through conversion for M&I purposes. If the pipes are sized so that they may be used for those purposes, then you need to discuss the conversion of them to purposes other than irrigation. More to the point, if growth and development trends continue as they are, why are we building an irrigation system in the first place? This relates to the purpose and need of the project (which is not well demonstrated) and to whether or not it makes sense to fund this project as currently contemplated. Also, what sources of funding are being utilized for each portion of the project, what cost allocation has occurred in the past between these various funding mechanisms and how is this supported by the purpose and need and the end results as predicted.

Responses to Comment Letter No. 25

25.1 Baseline conditions described for water resources in Section 3.2.5 of the Draft EIS include conditions that would occur in the future with full delivery of CUP agriculture and M&I water. This future demand assumes Jordanelle Dam is in place and fully operational, which will occur whether or not WCWEP is ever built. This is why Jordanelle Dam and its effects are included in baseline conditions for all of the Draft EIS resource topics. Any effects or potential effects Jordanelle Dam had or may have on surface water, groundwater, wetlands or other resources are unrelated to WCWEP and would occur with or without the WCWEP . The emplacement of the dam is an unrelated past project. Problems created by the dam, if any, would not change the comparative differences between baseline and the Proposed Action and DRP alternatives.

25.2 The Reclamation Projects Authorization and Adjustment Act of 1992 (PL 102-575) Section 303(b)(3)(A) states that the District shall construct a pipeline for the "purpose of providing a permanent replacement of water in an amount equal to the Strawberry basin water being supplied by the District for stream flows provided in paragraph (1) which would otherwise have been diverted to the Daniels Creek drainage." The State Division of Water Rights records indicate that the Daniels historical diversions have averaged 2900 acre-feet annually. The State Engineer has given the District no indication that the Daniel Irrigation Company is not beneficially using any of the Strawberry-Daniels transbasin water that has historically been diverted. Therefore, in accordance with PL 102-575, the District and DIC have negotiated a contract whereby the District will provide 2900 acre-feet per year (average) of irrigation water to the DIC and the DIC will terminate the diversion of water from the Strawberry River basin. Please see Section 1.2.1 (page W 1-2) and Section 3.2.5.2 (page W 3-15) of the Draft EIS.

25.3 Please see the Errata Summary for changes to Section 1.13.8 on pages W 1-76 and W 1-77.

25.4 Growth-inducing forces are discussed in Section 3.12.5.9 on page W 3-134. The reasons the Proposed Action and DRP alternatives would not induce growth are described in Section 3.12.6.3.10 on page W 3-142, Section 3.12.6.4.10 on page W 3-144, and Section 3.12.6.5.10 on page W 3-146. The cumulative impacts of other interrelated actions, including urban growth in Heber Valley, are described in section 3.21 that starts on page W 3-174 in the DEIS.

According to the county planning department, the majority of growth will be in 5 to 10 acre residential agriculture parcels. Using this assumption, the irrigated area will remain relatively the same. The pipes are not sized for purposes other than agriculture. Areas receiving water under the Proposed Action would use approximately 3 acre-feet per acre whether they are solely agriculture using sprinkler systems or low density residential, as planned, using sprinklers.

Please see the response to comment 22.1 concerning allocation of funds.

The UOICC desires to modify the Proposed Action to include the Westside Ditch in the streams to be given supplemental flows. It is our contention that the Westside Ditches were inadvertently left out of the analysis, as no comparative data has been published for public scrutiny. We believe the Westside Ditch 1, 4 alternative will prove to be far more beneficial to an 'ecological' approach for the WCWEP/DRP/PRRP projects. Rock Ditch 2, 3, 5 is much farther removed from the potential benefit to the PRRP and is characterized as a true irrigation ditch, following political (fence lines) boundaries in some reaches. Its compliment of supplement flows would not result in as significant a benefit to Spring Creek when compared to the potential benefit of supplemental flows from Westside Ditch 4, entering the Provo River directly above the Midway Bridge. 25.5

UOICC has continually been concerned about the lack of inclusion of the Westside Ditch and has made those concerns well known. Please include a discussion of the Westside Ditch as a possible recipient of instream flow under the proposed action. Related to that issue is the concept of providing public water in the tributary streams of the Provo River, which may inure solely to private benefit. While the provision of instream flow is a tremendous idea, the risk that the public would be excluded through lack of foresight or that this expense would solely benefit private landowners causes us to question its efficacy.

Generally speaking, this is a fairly good draft NEPA document, which speaks well of the planning process the District undertook prior to its preparation. However, the document reads as if you are trying to sell the proposed action rather than taking the requisite hard look required by NEPA. There is bias represented throughout and you need to work that out before the final document is issued.

25.5 Westside Ditch was not selected to receive supplemental flows under the Proposed Action for the reasons described in the response to comment 16.2.

WCWEP & DRP COMMENTS
SPECIFIC COMMENTS

Page

25.6 WS-2 **S.1.2.1 and S.1.2.2** - Please articulate how the funding for these projects and connected projects will be provided, the sources of that funding and how it is allocated between various funding sources.

25.7 WS-3 **S.1.2.4** - When you have mandatory legislation, I question whether you can have a no action alternative that meets none of the legislative prerequisites. You need to deal with this issue throughout this document.

25.8 **S.2.3** - This overall net increase in wetlands is not "in kind -- in place." You need to address and discuss that issue.

25.9 WS-4 **S.3.1.1** - You need to deal with the impact and effect of the emplacement of Jordanelle Dam as a barrier to downstream movement of subsurface waters tributary to the Provo River.

25.10 WS-7 **S.3.3.2** - You need more detail concerning how these projects will be funded from these various funding sources and from funding sources administered by other agencies.

25.11 W1-2 **1.2.1** - The list proposed needs seems incomplete. There are needs theoretically served by WCWEP including future secondary irrigation systems or even M&I needs. It may be wise to spend some more time developing needs and better tie them to Section 1.2.2 where you have articulated purposes.

25.12 W1-4 **1.3.2** - You need far more detail somewhere in this document concerning how the historic water supply requirements will be met. We had understood that would be met through releases from the dam and under the coordinated operating agreements. You need to provide that discussion to demonstrate you have taken a hard look at those issues. This also becomes important with respect to use of conserved water and the obligation to serve water through the Daniels Replacement Pipeline or other alternatives.

W1-14 **1.6.2 and 1.6.3** - You need far more detail somewhere in this document concerning how the historic water supply requirements will be met. We had understood that would be met through releases from the dam and under the coordinated operating agreements. You need to provide that discussion to demonstrate you have taken a hard look at those issues. This also becomes important with respect to use of conserved water and the obligation to serve water through the Daniels Replacement Pipeline or other alternatives.

25.6 Please refer to the response for comment 22.1, concerning funding allocations.

25.7 Please see the response to Comment 19.8.

25.8 The comment is correct that a net increase in wetland area in the upper Strawberry River basin is not "in-kind, in-place" replacement of the wet meadows that would be lost in Heber Valley. The 20.7 acres of low function and value wetlands that would be lost in Heber Valley because of groundwater elevation drawdown would be a significant impact. These low function and value wetlands would not be replaced in Heber Valley. Please see the response to Comment 24.1 and the Errata Summary for changes to Section 3.4.6.3.1 on page W 3-72 and Section 3.20 on pages W 3-172 and W 3-173. Also please see section 1.3.3 in the revised summary in the final EIS.

25.9 Please see the response to Comment 25.1.

25.10 Please see the response to Comment 22.1.

25.11 The needs listed in Section 1.2.1 on page W 1-2 of the DEIS are the needs that the Proposed Action and alternatives are responding to and were designed to meet. The Joint Lead Agencies identified these needs in accordance with 40 CFR 1502.13.

25.12 As stated in Section 1.6.1 on page W 1-9 of the Draft EIS, water right change applications would be needed to implement the project. These applications would protect historic water supply requirements. The surface and groundwater modeling have resulted in detailed analysis of the impacts of the project and would provide the basis for preparing the change applications. The impacts of the detailed analysis are described in Section 3.2.6 on pages W 3-28 through W 3-57 of the Draft EIS.

25.13	W1-15	**1.7.1** - You have not addressed the cumulative impact of the facilitation of growth by means of this project or the ability to convert the project to other purposes or uses in the future. Again, what is the point of doing this project if you are going to have wall to wall homes in the Heber Valley?
25.14	W1-16	**1.7.1.1.2** - We suggest you discuss the impacts of the emplacement of Jordanelle Dam on the surface, ground water and other waters related resources of the Heber Valley here. It needs to be a very involved and detailed study and may require further field work on the part of the District.
	W1-17	**1.7.1.2.4** - Is this still happening?
	W1-18	**1.7.1.2.6** - Are these all still happening and is the timing still the same?
25.15	W1-18 -19	**1.8** - Please discuss how annual operation maintenance and replacement costs will be split between the responsible entities listed here.
25.16	W1-37	**1.8.3.1** - Again, are these facilities designed to allow for ultimate use as a secondary irrigation system for residential uses? If that is the case and that is the ultimate future of this project, then you need to discuss it in detail.
25.17	W1-39 -42 -43	These pages are missing.
	W1-44	It does not make a great deal of sense to grant the Daniels Irrigation Company their alleged full allotment and cut back instream flows when some of that water right may have been forfeited. That issue is addressed above.
25.18	W1-45	**1.8.6** - What is the basis for a four percent transmission loss from CUP water delivered from Jordanelle? The problems created by the emplacement of the dam need to be discussed here as well.
	W1-46	This page is missing.
25.19	W1-49	Somewhere in this document you need to discuss in detail the nuts and bolts of the conserved water scheme under Section 207 and otherwise. It is difficult to see how everything fits together. This is a common problem throughout the document; the lay person is going to have a difficult time understanding the project.
25.20	W1-51	**1.8.7.1** - We question why any of these facilities are being retained unless they are on the National Historic Register. It just does not make good sense. If they are to be maintained, there must be an iron clad agreement demonstrating that they may never be used again.

25.13 Please see the response to comment 25.4.

25.14 Please see the response to Comment 25.1.

25.15 Information related to the allocation of operation, maintenance and replacement costs among the responsible entities is contained in Chapter 4, particularly Table 4-9, of the WCWEP Feasibility Study, which is available upon request. Responsibility for OM&R will be determined under the Project Implementation Agreement to be finalized upon completion of the FEIS.

25.16 Please see the response to Comment 25.4, second paragraph.

25.17 Thank you for your comment. We will provide you with the missing pages.

25.18 Concerning the four percent loss please see the response to Comment 19.17.

In response to the second part of the comment, please see the response to Comment 25.1.

25.19 Please see the FEIS, Section 3.2 Clarification of Water Supply and Budget Information. Operation of the project is described in Section 1.6 of the DEIS, including water right change applications, river operational procedures, and CUP reservoir operational procedures.

25.20 Elements of the existing diversion facilities that would be retained are eligible for listing in the National Register of Historic Places as described in Chapter 3, Section 3.17.6.3.2 on page W 3-164. These facilities would not be able to convey irrigation water because the east end of the tunnel would be plugged with concrete and portions of the earth canal leading to the concrete lined section would be removed, as described in Chapter 1, Sections 1.8.7.1 and 1.8.7.3 on page W 1-51. Retention of these historic elements of the diversion system was incorporated into the Proposed Action and alternatives to avoid and minimize impacts on existing environmental resources, as directed in 40 CFR 1502.14 (f) and defined in 40 CFR 1508.20.

25.21 W1-52 -53 **1.9** - When you make statements such as who will fund operating expenses and construct facilities you need to cite to your authority, whether it be the CUPCA or otherwise. This is a fairly pervasive problem within the document.

25.22 W1-56 -57 **1.1.1** - You need to discuss in detail how you reconcile the existence of this particular no-action alternative with the mandatory requirements in the CUPCA that these efforts be accomplished. I do not believe the Board has the authority to adopt such an alternative, so why is it here? This issue received considerable discussion in the planning process.

25.23 W1.69 **Table 1-22** - Please provide the mixture of funding and cost allocation amongst the varying portions of this table.

W1-76 **1.13.8** - See the comment above concerning the benefit and necessity of the Strawberry/Provo conveyance study.

25.24 W1-77 **1.13.9** - The last sentence is far too politically oriented and conclusory. This option received considerable discussion and deserves to have its impacts arrayed. The same is true for the next section.

25.25 W2-1 **2.1** - There is far too much reliance on documents and information contained in the technical reports. You need to set more of that information out here and in Chapter 3. Otherwise, your statements here are too conclusory and have not demonstrated that a hard look has been taken. The public should not be forced to acquire and wade through all those technical reports to answer their questions.

2.2 - As indicated above, this no-action alternative is not viable.

25.26 W2-1 -9 **2.3.1 through 2.3.17** - This approach is far too conclusory. There are not even citations to technical reports to support these assumptions and conclusions, much less quotes from the technical reports themselves. Also, when do you discuss the loss of the sediment created by the emplacement of the Jordanelle Dam?

25.27 W2-2 - 6 **Table 2-1** - You need far more detail and explanation for these numbers. Again, the effect of the Jordanelle Reservoir on surface, ground water and other resources must be dealt with.

25.28 W3-2 -5 **3.1.2** - The Tri-Valley Watershed Plan appears to be a related or connected action. We ask that more detail in that regard be supplied.

25.29 W3-7 **3.1.2.2** - Why is it unlikely but possible that CUP M&I water would be conveyed through HCSS?

25.21 Please see the Errata Summary for changes to Section 1.9 on page W 1-53 and Section 1.10 on page W 1-54.

25.22 Please see the response to Comment 19.8.

25.23 Please see the response to comment 22.1.

25.24 The alternatives referred to in the comment have been studied adequately to eliminate them from further consideration. As stated in Section 1.13 on page W 1-74, these alternatives would not meet the project purposes or needs or would cause unacceptable and adverse environmental or economic impacts.

25.25 The reason for publishing separate technical reports is to remove extensive technical data and analysis from the body of the EIS, which is intended for the general public. More detailed technical information than is included in the EIS is available in the relevant technical report. Please see the last paragraph of the Preface on the inside cover of the Draft EIS regarding availability of the technical reports.

25.26 As stated in section 2.1 on page W 2-1 of the Draft EIS, this chapter presents in summary fashion the impacts of the Proposed Action (WCWEP with Daniel Replacement Pipeline), DRP With Pipeline Alternative, DRP With Canal Alternative, and the No Action Alternative. Additional information regarding the impacts of the Proposed Action and alternatives is provided in Chapter 3 and the EIS draft technical reports.

Please see Appendix B, Section B.2.2.2, pages B-7 and B-8 of the Draft EIS, and Section 2.2.3.2 of the Water Quality Technical Report. These sections provide a detailed description of the methodology used to consider sedimentation in Jordanelle Reservoir and sediment supply in the Provo River downstream of Jordanelle Dam. Please see the response to Comment 25.1 for additional information regarding the last sentence in Comment 25.26.

25.27 Please see the response to Comment 25.1 concerning Jordanelle Dam.

25.28 The on-farm improvement portion of the Tri-Valley Watershed Plan was considered as a direct consquence of implementing the Proposed Action (see Section 3.1.2.1 page W 3-5 in the DEIS). The impacts of this portion of the Plan are covered through out the resource sections of Chapter 3 of the DEIS. The remaining portion of the Tri-Valley Watershed Plan (primarily water quality improvements) is an interrelated action as discussed in Section 1.7 of Chapter 1, starting on page W 1-14 of the DEIS. As much detail as possible regarding the related impacts of this plan was provided in the cumulative impact section (Section 3.21 that starts on page W 3-174). Additional information regarding the impacts of the Tri-Valley Watershed Plan will not be available until the on-going analysis of the plan is completed by the NRCS.

25.29 Please see the errata summary change for page W 3-7.

25.30 W3-8 **3.2.1** - You need to provide support for conclusions that on-farm water efficiency improvements would likely be infeasible and funding likely not available under the DRP alternatives.

25.31 W3-9 **3.2.2.1** - You need to deal with the growth facilitating aspect of this project head on, as well as the connected issue of why we are doing this project, if the Heber Valley is going to be wall to wall residential projects.

25.32 W3-9 -10 **3.2.2.2 through 3.2.3.2** - There is no reference here and on Map 3-2 to the impact of the emplacement of the dam.

25.33 W3-20 **3.2.5.5** - These references to the 75 cfs requirement seem to rest on the assumption that you do not have to provide the 75 cfs one way or another. The legislation requires that you do. Does it militate toward the investigation into other alternatives suggested above?

25.34 W3-25 **3.2.5.8.2** - You are using the wrong baseline for your groundwater level assumptions as discussed above. This would impact all of your discussions concerning wells, springs or any other water source or resource in the Valley.

25.35 W3-33 **Table 3-10** - This should be Westside Ditch 4 Supplemental Flow instead of Rock Ditch and its Average.

25.36 W3-35 **3.2.6.3.3.2, Sentence 2** - Should read: . . .would be created in **Westside Ditch 4** . . . instead of Rock Ditch.

25.37 W3-37 **Table 3-12** - This should be Westside Ditch 4 with its monthly data instead of Rock Ditch.

W3-44 **3.2.6.3.6.2** - Same comment concerning the impact of the emplacement of the dam.

25.38 W3-46 **3.2.6.3.6.2, Paragraph 8** - This paragraph should talk to the Westside Ditch 4 instead of Rock Ditch.

W3-49 **3.2.6.3.7** - Same comment concerning the impact of the emplacement of the dam.

25.39 W3-50 **3.2.7.4.3.2, Sentence 4** - Flows in the Westside Ditch 4 might not be reduced during late summer as a result of reduced CUP water deliveries to the North Fields Irrigation Company because of the possibility of supplemental water allocated for side channels for the PRRP.

25.40 W3-64 **3.3.6.4.2.2** - What about the loss of sediments in the Provo River due to the Jordanelle Dam?

25.30 Please see the Errata Summary for changes to Section 3.2.1 on page W 3-8.

25.31 Please see the response to Comment 25.4.

25.32 Please see the response to Comment 25.1.

25.33 Please see the response to Comment 19.30.

25.34 Please see the response to Comment 25.1.

25.35 Please see the response to Comment 16.2 and the errata summary for Page W 3-33, Table 3-10.

25.36 Please see the response to Comment 16.2.

25.37 Please see the response to Comment 16.2.

25.38 Please see the response to Comment 16.2.

25.39 We assume the comment was in reference to Section 3.2.6.4.3.2 on page W 3-50 of the DEIS. Please see the response to comment 16.2

25.40 Please see Appendix B, Section B.2.2.2, pages B-7 and B-8 of the Draft EIS, and Section 2.2.3.2 of the Water Quality Technical Report. These sections provide a detailed description of the methodology used to consider sedimentation in Jordanelle Reservoir and sediment supply in the Provo River downstream of Jordanelle Dam. Also please see the response to comment 25.1.

25.41 W3-67 **3.4** - As previously stated, the emplacement of the dam may have an effect on wetlands, as well as other water sources.

25.42 W3-82 **3.5.5.1.3, Sentence 2** - The Westside Ditch 4 has superior habitat and is predicted to produce higher predicted trout standing crop than Rock Ditch.

25.43 W3-83 **Table 3-31** - Where is the data on the Westside Ditch 4 showing these baseline habitat ratings?

25.44 W3-84 **Table 3-32** - Where is the data on the Westside Ditch 4 showing baseline stream area, predicted trout standing crop and trout biomass?

25.45 W3-85 **3.5.5.3, Paragraph 2, Sentence 4 and 6** - Where is the Binns ratings for Westside Ditch 4 which is predicted to bear out the validity of this option over the less desirable Rock Ditch?

25.46 W3-89 **3.5.7.3.1.2, Paragraph 6, Sentence 1** - As previously stated in 3.2.6.4.3.2, flows "in Rock Ditch would be reduced during late summer" providing less than year-round, optimal flow conditions for game-fish species. Again, supplemental side channel flows supplied from the PRRP to the Westside Ditch 4 would result in superior year-round conditions.

Sentence 3 - The use of Rock Ditch as receiving supplemental flow is further diminished by this fact as the shorter Rock Ditch contributes only a diminishing benefit to Spring Creek while the longer Westside Ditch 4 would connect directly to the Provo River just above the Midway Bridge providing for a significant increase in predicted trout standing crop.

25.47 W3-88 **Table 3-33** - Where is the comparative data on the Westside Ditch 4 on predicted trout standing crop and trout biomass?

25.48 W3-90 **3.5.6.3.2.2, Paragraph 2** - Westside Ditch 4 has better habitat than that of Rock Ditch for these non-game fish species, as would be borne out with sampling, especially in the general area where this proposed side channel drains back into the Provo River just above the Midway Bridge.

25.49 W3-94 **3.6.4, Paragraph 1, Bullet 1** - Why was Rock Ditch arbitrarily selected to receive target supplemental instream flow over the more obvious Westside Ditch 4 in the absence of comparative data?

25.50 W3-95 **3.6.5, Paragraph 2, Sentence 2** - Mule deer are typically found along the lower Westside Ditch because of the abundance of riparian vegetation, especially in the area where if approaches the Provo River just above the Midway Bridge (see Map A-3, Riparian Woodland).

25.41 Please see the response to Comment 25.1.

25.42 Please see the response to Comment 16.2

25.43 Please see the response to Comment 16.2

25.44 Please see the response to Comment 16.2.

25.45 Please see the response to Comment 16.2

25.46 Please see the response to Comment 16.2.

25.47 Please see the response to Comment 16.2

25.48 Please see the response to Comment 16.2

25.49 Please see the response to Comment 16.2

25.50 Westside Ditch near the Midway Bridge at the Provo River is not within the WCWEP and DRP impact area of influence defined in Section 3.6.4 on page W 3-94 of the Draft EIS.

25.51 **3.6.5.12, Paragraph 2, Sentence 2 -** It is unlikely that pheasant are found in the Heber Valley due to the constraints of low winter temperatures combined with the lack of production of grain food stuffs.

25.52 **3.6.5.2.1, Paragraph 1, Sentence 1 -** Mink are common along the Provo River, especially in the area where Westside Ditch 4 enters the river just above the Midway Bridge.

25.53 W3-105 **3.7.5.5, Paragraph 3 -** These habitats and potential for additional habitat already exists along the lower courses of the Westside Ditch 4, especially in the area where it approaches the Provo River above the Midway Bridge. Rock Ditch has little such habitat of potential for spotted frog populations.

25.54 W3-106 **3.7.6.3.5 -** By including the Westside Ditch 4 in the Proposed Action the potential for positive effects on spotted frogs becomes a reality.

25.55 W3-123 **3.11.6.2** - The assumption in your bullet point is wrong and needs further analysis.

25.56 W3-134 **3.12.5.9 -** As previously stated, this project may well facilitate growth.

25.57 W3-135 **3.12.6.3.1** - To make this conclusion is simplistic for the reasons stated above.

25.58 W3-142 **3.12.6.3.10** - To make this conclusion is simplistic for the reasons stated above.

25.59 W3-170 -171 **3.19.2** - The approach to have CUWCD set aside money to deal with this problem may solve part of the issue concerning the emplacement of the dam. However, any funds should provide for the replacement and losses of wetlands and other water resources due to the effect of the dam.

25.60 W3-174 -175 **3.21.2.1** - You have ignored the impact of the dam referenced above here and throughout this section.

25.61 W4-4 **4.3.1.5** - Although representatives of the UOICC brought the issue of the overlooked Westside Ditch to the attention of the Committee at every opportunity, the CUWCD has failed to recognize those concerns and continues to do so without any explanation.

25.62 Map A-3 All of the smaller streams including the Westside Ditches, Middle Ditches, Rock Ditches, Spring Creek, Creamery Ditch, London Ditch, etc. are all depicted 'out of place' relative to the vegetative types in the valley rendering the map almost worthless for comparative purposes. Apparently, an out-of-sync overlay—do it over!

25.51 We assume the comment is in reference to Section 3.6.5.1.2 on page W 3-95. Information on pheasant distribution in Heber Valley was obtained from the Utah Division of Wildlife Resources.

25.52 Please see the response to Comment 25.50

25.53 Please see the response to Comment 25.5

25.54 Please see the response to Comment 16.2.

25.55 It is not clear which statement the comment is addressing. The first sentence in the last paragraph on page W 3-123 states that the Proposed Action and alternatives would not cause more people to move into Heber Valley, and references the growth-inducing discussion in the Draft EIS. Please see the Errata Summary for changes to Section 3.11.6.2 on page W 3-123.

Please see the response to Comment 25.4 for additional information regarding growth-inducing impacts.

Please see the Errata Summary for changes to Section 1.13.8 page W 3-123.

25.56 Please see the response to Comment 25.4

25.57 Please see the response to Comment 25.4

25.58 Please see the response to Comment 25.4.

25.59 Please see the response to Comment 25.1.

25.60 Please see the response to Comment 25.1.

25.61 Please see the response to Comment 16.2.

25.62 Map A-3 was generated from ortho-photographs that were not rectified. The fact that the small streams are slightly shifted relative to the vegetation did not affect the EIS analysis because there are no wetland impacts in these areas. Map A-3 was generated specifically for the Draft EIS, and is not intended to be used for other general purposes. Therefore, a revision is not required.

Comment Letter No. 26

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Reston, Virginia 22092

In Reply Refer To:
Mail Stop 423

AUG 12 1996

MEMORANDUM

To: Project Manager, Central Utah Water Conservancy District
Executive Director, Utah Reclamation Mitigation and Conservation Commission

From: James F. Devine
Senior Advisor for Science Applications

Subject: Review of Draft Environmental Impact Statement for the Proposed Wasatch County Water Efficiency Project and Daniel Replacement Project, and the Proposed Provo River Restoration Project, Wasatch County, Utah

Per the request contained in the Central Utah Water Conservancy District's memorandum of June 10, 1996, the U.S. Geological Survey (USGS) has reviewed the subject draft environmental impact statement and offers the following comments:

Wasatch County Water Efficiency Project and Daniel Replacement Project

Daniels Creek, above Diversions:

Section 3.2.5.4.1.1, Page W 3-17

26.1 The value of 2 cubic feet per second (cfs) used as the natural winter flow at the USGS gage on this stream should be changed to approximately 3 cfs for the November through February periods.

Impact Analysis:

Section 3.2.6

26.2 The affects on canals that provide flood control in Heber Valley should be discussed in the final environmental impact statement.

Section 3.4.6

The source of water for restoration of wetlands should be further discussed in the impact section.

26.3 The proposed project will yield a net increase in wetland area in the project area, but will result in a loss of 2.1 acres of riparian woodland. Some discussion of relative values of the various types of wetlands may be appropriate to determine if this loss is acceptable.

Responses to Comment Letter No. 26

26.1 Please see the Errata Summary for changes to Section 3.2.5.4.1.1 on page W 3-17.

26.2 The effects on canals that provide flood control in Heber Valley are discussed in Section 3.13.6.3.2, page W 3-148 of the Draft EIS. The Proposed Action would not decrease the capacity of any existing canals. All of the canals would therefore have the same or greater flood control capability as compared to baseline conditions.

26.3 Section 1.1 on page W 1-1, Section 1.2.1 on page W 1-2, Section 1.3.2 on page W 1-4, Section 1.8.7 on page W 1-49 and Table 1-13 on page W 1-47 clearly document the termination of the 2,900 acre-feet DIC transbasin diversion from the upper Strawberry River basin. Section 3.4 on pages W 3-71 through W 3-74 document how the return of this water to the upper Strawberry River and its tributaries would enhance the various types of wetlands. For example, please see Sections 3.4.6.3.1 on page W 3-73 and Section 3.4.6.3.4 on pages W 3-73 and W 3-74.

A 404 Permit is not required for the Proposed Action, therefore the USFS is the management agency responsible for the management of these wetlands, which are located on National Forest land. The USFS has accepted the loss of 2.1 acres of riparian woodland. Please see the response to Comment 24.1 for further discussion of wetlands losses.

Provo River Restoration Project

Water Resources:

Section 3.2

There would be an increase in travel time between Jordanelle and Deer Creek Reservoirs. Small groundwater changes in the northern part of the valley, adjacent to the river, could occur.

Temperature:

Section 3.3.6.3.1.2, Page P 3-12

There is an apparent contradiction between the first and second paragraphs of this section. The first paragraph, and accompanying table, state that temperature changes from 1.2°F to 6.2°F are expected in individual reaches. The second paragraph states that "temperature increases in the river are less than 0.3°F using worst-case mixing and dilution calculations." One of these conclusions must be incorrect and should be deleted.

Copy to: USGS State Representative, Water Resources Division, Utah
Director, Office of Environmental Policy and Compliance

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Comment Letter No. 27

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

August 13, 1996

Regulatory Branch (199450621)

Karen M. Ricks
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

Dear Ms. Ricks:

The Corps of Engineers' Utah Regulatory Office has completed its review of the Draft Environmental Impact Statement (DEIS) for the Wasatch County Water Efficiency Project and Daniel Replacement Project (WCWEP and DRP).

27.1 As stated in previous comments regarding the wetland mitigation proposed for this project, we are concerned over an approach to wetland mitigation which seems couched mostly in terms of acreage. This is exemplified by Table 3-27, in which wetland enhancement and wetland creation are given the same weight in compensatory value, and compensation in a different watershed is, by implication, rated equal in value to compensation in the watershed in which wetlands are lost.

It is also notable that of the 70.4 acres managed by the U.S. Forest Service that are expected to be enhanced under the Proposed Action, 46.4 acres are within areas that are presently grazed and that would continue to be grazed under the Proposed Action. The other 24 acres lie within the area managed in accordance with the Strawberry Valley Environmental Impact Statement (EIS). Even these 24 acres are not absolutely excluded from potential grazing in the future, since the terms of the Record of Decision for that EIS require that these acres be protected from livestock grazing until specific objectives for riparian and wetland enhancement are met. Finally, credit is given in Table 3-27 for creating 2.6 acres of shrub wetland by restoring water flows to sections of the Strawberry River and its tributaries. The text of the DEIS, however, suggests that the creation may be only a partial effort, since the Forest Service has requested separate funding from the Mitigation Commission to plant willows in the area. Is the 2.6 acres included in the area
the Forest Service proposes to plant? If planting the 2.6 acres
with willows or other wetland shrubs is needed in order to
27.2 restore or enhance these areas, it seems these plantings should
be a mitigation commitment of the WCWEP with DRP, rather than a
separate project.

Responses to Comment Letter No. 27

27.1 Please see the response to Comment 24.1.

27.2 Planting willows is not part of the Proposed Action or DRP as noted on page W 3-74 of the Draft EIS in Section 3.4.6.3.5. Willows have not been planted by the USFS along the streams that would be enhanced under the Proposed Action or DRP. The USFS and the Mitigation Commission presently are conducting a joint area-wide analysis of the Strawberry River valley. This analysis is not being conducted for this EIS analysis and includes evaluation of existing social, biological and physical conditions, review of past monitoring data and identification of a range of sustainability for resource values. The results of the analysis will be used by the USFS and Mitigation Commission to identify future mitigation projects.

In regard to our regulatory authority over actions proposed under this project, it is, as your document indicates, probably quite limited. If, however, in the future usage of these pipelines or canals should change such that the majority (greater than 50%) of the water they carry is not used for irrigation (e.g., it is used for M & I), excavation or the discharge of fill in waters of the United States for projects involving these facilities would then be regulated under Section 404 of the Clean Water Act.

I hope our comments will be useful to you in the preparation of the FEIS. If you have any questions, please contact Ms. Michele Waltz at the Utah Regulatory Office, 1403 South 600 West, Suite A, Bountiful, Utah 84010, telephone (801) 295-8380.

Sincerely,

B Carter

Brooks Carter
Chief, Intermountain
Regulatory Section

Copies furnished:

Mr. Dave Ruiter, U.S. Environmental Protection Agency, 999 18th Street, Suite 500, Denver, Colorado 80202-2466
Mr. Michael C. Weland, Executive Director, Utah Reclamation, Mitigation and Conservation Commission, 355 West 1300 South, Orem, Utah 84058-7303
Mr. Harold Sersland, Central Utah Water Conservancy District, 355 West 1300 South, Orem, Utah 84058-7303
Mr. Reed Harris, U.S. Fish and Wildlife Service, Lincoln Plaza, 145 East 1300 South, Suite 404, Salt Lake City, Utah 84115
Mr. Ralph G. Swanson, U.S. Department of the Interior, 302 East 1860 South, Provo, Utah 84606-7317

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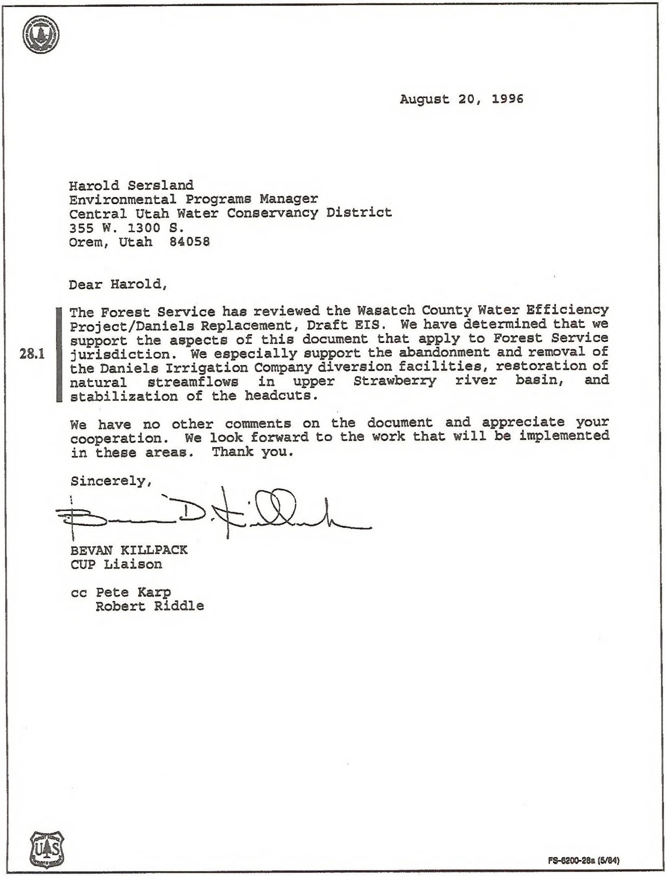
Comment Letter No. 28



August 20, 1996

Harold Sersland
Environmental Programs Manager
Central Utah Water Conservancy District
355 W. 1300 S.
Orem, Utah 84058

Dear Harold,

28.1 The Forest Service has reviewed the Wasatch County Water Efficiency Project/Daniels Replacement, Draft EIS. We have determined that we support the aspects of this document that apply to Forest Service jurisdiction. We especially support the abandonment and removal of the Daniels Irrigation Company diversion facilities, restoration of natural streamflows in upper Strawberry river basin, and stabilization of the headcuts.

We have no other comments on the document and appreciate your cooperation. We look forward to the work that will be implemented in these areas. Thank you.

Sincerely,

BEVAN KILLPACK
CUP Liaison

cc Pete Karp
   Robert Riddle

FS-6200-28a (5/84)

Responses to Comment Letter No. 28

28.1 Thank you for your comment and input.

United States Department of the Interior
FISH AND WILDLIFE SERVICE
UTAH FIELD OFFICE
LINCOLN PLAZA
145 EAST 1300 SOUTH, SUITE 404
SALT LAKE CITY, UTAH 84115

In Reply Refer To
(CO/KS/NE/UT)

August 23, 1996

Ms. Karen M. Ricks, Project Manager
Wasatch County Water Efficiency Project
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058

Dear Ms. Ricks:

This is in response to a joint request from you and Mr. Michael C. Weland, Executive Director, Utah Reclamation Mitigation and Conservation Commission (URMCC) dated June 10, 1996 for comments on Draft Environmental Impact Statements (DEIS) on the proposed Wasatch County Water Efficiency Project (WCWEP) and the Provo River Restoration Project (PRRP). This letter contains the Fish and Wildlife Service's (Service's) comments on the WCWEP DEIS. We are providing comments on the PRRP DEIS by separate correspondence addressed to Mr. Weland.

GENERAL COMMENTS:

The Service and other involved conservation and land management agencies have worked closely with the Central Utah Water Conservancy District (CUWCD) and URMCC throughout the development of plans for the WCWEP and PRRP. Early in the planning process, basic plans were reviewed by involved agencies, proposed procedures for evaluating impacts to fish and wildlife habitats were reviewed by the Service and the other involved parties, and we were afforded opportunities to review results of the analysis and offer suggestions for modifications to protect environmental resource values. In general the Service concurs with the analyses presented in the WCWEP DEIS.

The WCWEP would restore historic streamflows to the upper Strawberry River, and with appropriate changes to better protect environmental resources the Service would be supportive of the project. Restoration of historic streamflows in the upper Strawberry River is the highest priority component of aquatic mitigation plans for the Strawberry Aqueduct and Collection System (SACS). Restoration of the historic streamflows will help mitigate losses in fishing opportunities caused by SACS, facilitate natural trout reproduction that significantly contributes to maintenance of the Strawberry Reservoir fishery, make additional water available for fisheries enhancement in streams affected by the SACS, and permit modifications of fish stocking allocations for management of Strawberry Reservoir and thus permit the stocking of other waters for fishery enhancements.

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The Service finds that modifications in designs for power lines to minimize the hazard of raptor electrocutions are necessary and that several other commitments to protect environmental resources are also warranted. We are optimistic that our suggested modifications can be incorporated into project plans.

The DEIS incorporates a number of Standard Operating Procedures (SOPs) to avoid, minimize or rectify adverse impacts on natural resources, elements to mitigate unavoidable environmental damages, and conservation measures to avoid impacts to threatened and endangered species. Our specific comments, which follow, suggest some modifications in these commitments to protect environmental resources. Some previous documents that we have reviewed on other federal water development projects to meet National Environmental Policy Act compliance needs have collectively referred to such measures as "Environmental Commitments" and included a list of these measures in the Appendix. A number of commitments that will protect environmental resources are appropriately incorporated in different sections of the document under review. We believe a list of all of the environmental commitments would aid reviewers in understanding overall plans for avoiding losses to the extent practicable and mitigating unavoidable impacts. We recommend that such a list be included in the Appendix. 29.1

SPECIFIC COMMENTS

The same numerical designations used in the DEIS are used as reference here followed by paragraph numbers in parenthesis ( ).

1.8.3.3.1 (1) - Several environmental commitments (ECs) are made here which we have considered along with some of the SOPs (see comments on 1.12.9.1) and we have attempted to paraphrase as follows:

- The top one foot of soil removed during the construction of any project feature shall be stockpiled for site restoration.
- Where pipelines transect wetlands, fabric overlays shall be used to minimize damage to adjacent vegetation.
- Scrap materials shall be removed from work sites after construction is completed.

1.8.3.3.3 (1) - A paraphrased EC is as follows:

- Construction of pipeline crossings in stream channels will be scheduled during low flow periods.

29.2 Cont. 1.8.4.1 (6) - Mention is made of plans for power lines and power poles including 3.6 miles of power line extensions. Provisions for measures to minimize the danger of raptor

Responses to Comment Letter No. 29

29.1 The suggested environmental commitments have been included in the Environmental Commitments List (Appendix 1 in the Final EIS) and include the Standard Operating Procedures from Section 1.12.9 of Chapter 1, page W 1-69 and some of the environmental commitments which were recommended in comments on the DEIS.

29.2 The comment requested measures be taken to minimize the danger of raptor electrocution on both existing and new power lines used under the Proposed Action and alternatives to transmit power to new pumping stations. The CUWCD agrees to include these measures only on new power lines constructed under the Proposed Action and alternatives. The Proposed Action and alternatives would not increase the risk of raptor electrocution on existing lines and therefore CUWCD does not agree to upgrade the existing lines under the Proposed Action and alternatives. The Environmental Commitments List in Appendix 1 of the Final EIS includes measures designed to protect raptors on new lines in accordance with the publication cited by the commentor.

29.2 Cont. electrocution on power lines have not been included in the document. All power poles, whether new or existing, that are used to transmit power to the new pumping stations should be equipped with features to reduce raptor electrocution hazards. As mentioned in the Service's Biological Opinion, the Service's concurrence in a "no effect" for the threatened bald eagle is contingent upon the adoption of designs that are set forth in the publication, "Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 1981", Raptor Research Report No. 4, Raptor Research Foundation, Carpenter St. Croix Nature Center, 12805 St. Croix Trail, Hastings, Minnesota 55033. We therefore suggest the following language for consideration as an EC:

- All power lines that transmit electricity to proposed pumping stations shall be consistent with designs contained in the publication, "Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 1981", Raptor Research Report No. 4., Raptor Research Foundation, Carpenter St. Croix Nature Center,12805 St. Croix Trail, Hastings, Minnesota 55033.

1.8.7.8 (1) - Following is a paraphrased EC:

- Abandoned two-wheeled track roads in the upper Strawberry Valley will be ripped and re-vegetated and posted with signs that read, "Closed to Motorized Vehicles".

29.3 1.11 (1) - We suggest adding the following bullet to identify conditions that would not change if the no action alternative is pursued:

- A 10,000 angler-day deficit in plans to mitigate stream fishing losses caused by the Strawberry Aqueduct and Collection System would remain, and there would be a need to develop alternative plans to compensate for this loss.

29.4 1.11 (3) - The first bullet made in reference to a commitment made in the M&I System EISs for the maintenance of minimum stream flows between Jordanelle and Deer Creek reservoirs of 125 cfs may need modification because of verbiage in Sec. 303 (c)(2) of the Central Utah Project Completion Act (CUPCA). This section of CUPCA specifies that the 125 minimum streamflow is to be provided continuously and in perpetuity from the date first feasible, and that the URMCC in consultation with the Service and the Utah Division of Wildlife Resources (UDWR) is to determine this date. Consultation between the agencies concerning the date when the minimum streamflow can feasibly be maintained has not yet occurred. Jordanelle Reservoir became operational on July 9, 1996, and the Service believes that delivery of the intended 125 cfs should be possible most of the time; however, the CUWCD, Service, and UDWR may need to consider the potential need for reducing the flow to facilitate construction of one of the PRRP action alternatives or for reconstruction of existing diversion facilities on the Provo River (as is specified in the second bullet)..

29.3 Please see the Errata Summary for changes to Section 1.11 on page W 1-56.

29.4 CUWCD, DOI and the Mitigation Commission fully support maintaining the 125 cfs minimum instream flow in the Provo River between Jordanelle and Deer Creek reservoirs in perpetuity. This minimum instream flow was implemented in July 1996 when Jordanelle Reservoir became fully operational. CUWCD, DOI and the Mitigation Commission would support reducing flows in the Provo River below 125 cfs for short periods to facilitate modification of river diversions or construction of the PRRP if other resource agencies concurred.

29.5 The third bullet describing commitments contained in M&I System EISs is erroneous in that fencing of the new angler access along the Provo River was not required by these commitments. The Service however believes fencing of the floodplain to allow management of cattle grazing and increase the chance of regrowth of cottonwood trees that are used for perching by the bald eagle is essential and intends to include fencing as a reasonable and prudent alternative for reducing take of bald eagles in their BO on the PRRP. Inclusion of fencing is therefore necessary although not a commitment of the M&I EISs. With this exception, we believe including the first three bullets presented here as ECs would be appropriate for consideration in regards to the PRRP DEIS. Only the first bullet appears to be applicable to activities of the CUWCD. The fourth bullet does not appear to be an EC.

29.6 Cont. The following ECs are suggested for consideration:

- The CUWCD shall maintain a minimum streamflow of 125 cfs in the Provo River between Jordanelle and Deer Creek reservoirs. Exceptions to this minimum streamflow may be made if requested by the UMRCC after consultation with the Service and UDWR pursuant to Sec. 303(c)(2) of the CUPCA if lower flows are necessary to facilitate construction or stream rehabilitation activities or to minimize environmental impacts during construction or stream rehabilitation activities.

- Any existing river diversion facilities located between Jordanelle and Deer Creek reservoirs that are incapable of allowing a minimum of 125 cfs to pass at all times would be reconstructed to function properly at that flow.

- Designs for river diversion structures shall include features to screen all intakes and facilitate fish migration (fish ladders). Such designs shall be developed in cooperation with the Service and Utah Division of Wildlife Resources.[1]

- The URMCC would construct seven new fishing access points along the Provo River between Jordanelle and Deer Creek reservoirs, acquire and fence land along the Provo River to provide contiguous fishing access (by foot only), and construct parking areas and sanitary facilities. Specific plans for the access points and appurtenant facilities shall be developed in cooperation with the Service and UDWR in the interest of avoiding and protecting sensitive fish and wildlife habitats and native plant communities.

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[1] This commitment is not included in the DEIS.

29.5 The summary of commitments from the M&I EISs in Section 1.11 on page W 1-56 of the WCWEP and DRP Draft EIS is not erroneous. Page A-20 of the 1979 Final M&I System EIS (USBR 1979) includes a commitment to fence the land acquired for fisherman access, unless suitable fencing already exists. The 1987 Final Supplement to the Final M&I System EIS (USBR 1987) and its Record of Decision do not modify this commitment.

29.6 Thank you for your recommended environmental commitments; however, it is appropriate to include only one related commitment in Appendix 1 of the Final EIS for the reasons stated below.

It is not appropriate to include the first, second and fourth recommended environmental commitments as part of the WCWEP or DRP alternatives because these commitments are part of baseline conditions and would be implemented without the WCWEP or DRP being constructed. This is why they are included in the description of commitments that would be implemented under the No Action Alternative in Section 1.11, on pages W 1-56 and W 1-57 of the Draft EIS.

The comment requested an environmental commitment to include screens and fish passage facilities in designs for river diversion structures. Addition of fish screens and fish passage will be based on results obtained from operation studies. The last bullet of this comment recommends fencing "the flood plain" to increase the "regrowth of cottonwood trees." It is not appropriate to fence the flood plain of the Provo River as part of the WCWEP or DRP. The appropriateness of including fencing as an environmental commitment of the PRRP is addressed in the responses to comments on the PRRP Draft EIS.

29.6 Cont.

- As appropriate, the floodplain shall be fenced so that cattle grazing can be managed to increase the chance for the regrowth of cottonwood trees.[2]

29.7

1.12.5 (1) - Mention is made that the principal construction materials would be gravel, concrete, reinforcing steel (rebar), steel pipe, PVC pipe and woven mesh wire.

The escapement of wet concrete could be toxic to organisms and could seal substrates where fish eggs are deposited and interstices that harbor young fish and other aquatic organisms. Every effort should be made to avoid spilling concrete and spilled concrete should be cleaned up immediately. Removal of scrap materials after construction is included in the health and safety SOPs, which we strongly concur with because such material could injure recreational users if not removed.

Following are three ECs that we suggest for consideration:

- Care will be taken to avoid the escapement of wet concrete into water ways and other sensitive fish and wildlife habitats.
- Concrete batch plants will be situated in specific areas away from waterways and sensitive fish and wildlife habitats.
- Concrete trucks and equipment shall be washed only in specifically designated areas, which will not impact streams or sensitive fish and wildlife habitats.

1.12.6 (2) - Mention is made that electrical service would be required to 10 canal gate structures for intermediate movement of canal gates and lighting at night.

Previous comments on the need for raptor protection on power lines are applicable to this discussion (see comments on 1.8.3.3.3 (1).

29.8 Cont.

1.12.9.1 Standard Construction Procedures includes SOPs for Aquatic Resources, Health and Safety, Revegetation and Erosion Control, Wetlands, and Wildlife Resources, that are appropriate ECs. We note that 1.8.3.3.1 (1) specifies that the top 1 foot of soil removed for pipeline construction will be stockpiled for site restoration, and that procedures under revegetation and erosion control at the bottom of page W 1-71 call for stockpiling topsoil that

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[2] The Service's draft Biological Opinion on the PRRP includes fencing as a term and condition to reduce the length of time required for the reestablishment of mature cottonwood trees. It is important to understand that young cottonwood trees and cottonwood leaves are extremely palatable to livestock. Exclusion of livestock for at least 15 to 20 years may be necessary for the successful reestablishment of cottonwood trees. Project plans described in 3.3.6.3.1.1 of the DEIS state that in addition to lands required under baseline conditions, 169.5 acres of other agricultural lands will be acquired and fenced to exclude livestock. From the fish and wildlife perspective, exclusion of livestock from as much of the project lands as possible would be desirable except in cases where it is determined that grazing would be an appropriate vegetation management tool.

29.7 The environmental commitments recommended in the comment have been added to the Environmental Commitments List in Appendix 1 of the Final EIS.

29.8 The recommended environmental commitments regarding the depth of soil to be stockpiled and replaced have been added to the Environmental Commitments List in Appendix 1 of the Final EIS.

Additional topsoil needed for work site restoration would be obtained from areas where construction disturbance has occurred.

29.8 Cont. is removed during trenching operations, without any reference to the one foot depth. We believe it is appropriate to specify the depth of top soil that is to be stockpiled because this will provide guidance to those who do the construction. Page W 1-71 also states that additional topsoil will be added during restoration if needed to reestablish vegetation. No mention is made however of where the additional topsoil will be obtained and the impacts of securing this additional soil is therefore unknown.

29.9 One of the bullets at the bottom of Page W 1-71 states that revegetated areas will be monitored during the fall and spring after initial reseeding, and that various measures will be implemented to control noxious plants. Noxious weeds are continuing to be a problem in certain areas where the Bureau of Reclamation constructed wetland mitigation ponds downstream from Jordanelle Reservoir. We believe that this monitoring should be longer than a one-year duration and that it should continue until monitoring records indicate achievement of revegetation goals. We also suggest that biological controls for noxious weeds be considered. Appendix A, the Noxious Weed Control Plan, contains several measures for controlling noxious and undesirable plants that are not mentioned here. We have listed ECs that we believe are appropriate in later comments on that part of the DEIS.

29.10 The Service should be included in the list of agencies expected to develop plans for monitoring the success of wetland mitigation plans.

It is mentioned that with the exception of replacing buildings, land uses in rights-of-ways (ROWs) for buried pipelines will be permitted to resume after construction, and that land owners will be compensated for their losses.

29.11 We suggest that any land use practices that would significantly impact water quality (such as feed lots that drain into waterways) also not be permitted.
We have attempted to paraphrase ECs that we believe are appropriate as follows:

- Topsoil to a depth of one foot (or less if topsoil layer is less than one foot deep) shall be removed in the process of constructing any features and stockpiled for site restoration.
- As may be needed for revegetating disturbed sites, additional top soil of suitable quality shall be secured from areas that will have minimal impacts on important fish and wildlife habitats.
- Disturbed areas shall be reclaimed and returned to pre-existing or enhanced fish and wildlife habitats as soon as possible after construction.
- Site analysis shall be conducted on areas where there is a potential erosion problem, to determine appropriate procedures that are needed (i.e., soil stabilizing materials, seeding mixtures, and mulching and fertilizing treatments).

29.9 The environmental commitment related to noxious weed monitoring has been changed to extend the monitoring period until satisfactory revegetation has occurred. The noxious weed-related environmental commitments also have been edited so biological control mechanisms would be considered. Please see Errata Summary, Section 4.6, Appendix A, page A-4.

29.10 The FWS has been added as one of the agencies that would be consulted while developing plans for monitoring the success of wetland mitigation (see the related environmental commitment in Appendix 1 of the Final EIS).

29.11 As indicated in Section 1.8.2.2 (page W 1-30) the 27.4 acres of permanent easement to be acquired under the Proposed Action would be permanently restricted to uses that do not interfere with the operation or maintenance of facilities. We interpret this commitment to address the water quality issues raised by the comment.

- Plant species for rehabilitating disturbed areas and for erosion control shall be selected on the basis of soil type, root stabilizing characteristics, consistency with composition of contiguous native plant communities, compatibility with wildlife, and ability to compete with undesirable vegetation. Appropriate revegetation plans shall be developed in cooperation with the Natural Resources Conservation Service (NRCS), Service, and UDWR. Planting, watering and fertilizer applications will be on schedules that are optimal for the species selected.

- Monitoring to assure the success of revegetation and erosion control efforts shall continue for a period of at least 3 years, and longer if anticipated results have not been achieved.

- To the extent feasible, heavy equipment will not be used in stream beds and riparian areas. If heavy equipment must be used, seasonal timing, equipment and techniques that will minimize impacts shall be employed.

- Toxic materials will be properly handled, stored, used, and disposed of in a safe manner.

- Silt fences will be erected and maintained during the construction period to reduce the potential for impacts to wetlands.

- Construction barriers shall be installed to prevent unnecessary construction damage to adjacent wetlands.

- Impervious barriers shall be installed where needed to prevent the drainage of wetlands by trench and pipeline construction.

- Materials excavated in the construction of pipeline trenches shall not be deposited on wetland or sensitive plant or wildlife habitat areas; this material shall be stored on adjacent roadways or in other upland areas to be used later in refilling the excavation.

- After wetland topsoils are replaced, the disturbed area will be graded to contour levels that blend with adjacent lands, and revegetated with a mixture of desirable wetland plant species.

- A wetland monitoring plan shall be developed in cooperation with the U.S. Army Corps of Engineers (Corps), U.S. Forest Service, NRCS, UDWR, and the Service, and periodically these agencies shall be afforded opportunities to review monitoring records, amend the plan as may be appropriate, and offer recommendations in the interest of preserving and enhancing natural resource values.

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- To the extent feasible, construction that causes increases in water turbidity shall avoid the brown trout spawning and egg incubation period (October-March).
- To the extent feasible, ROWs for project features will be aligned to minimize the loss of large trees and sensitive fish and wildlife habitats.
- To the extent feasible, construction in vicinity of such sensitive habitats as deer fawning areas will be scheduled during times when disturbance impacts will be avoided. (Typically deer fawning occurs during June-July.)
- Future land uses in ROWs will exclude the replacement of buildings removed during construction and any uses that impair water quality.

29.12 2.3.4 - This paragraph implies that the leatherside chub prefers existing habitat conditions. This does not agree with comments in the Aquatic Resources Technical Report (page W3-11) and should be clarified.

2.3.6 (1) - The DEIS was released prior to the release of a letter of concurrence by the Service which concurred with the CUWCD's BA for bald eagle; however, the Service's concurrence with a "no effect" determination for the bald eagle was contingent on the adoption of designs for power lines that minimize electrocution hazards for raptors. See previous comments on 1.8.4.1 (6) and 1.12.6 (2).

29.13 The Service does not concur with a no effect determination for the spotted frog. Discussions with the hydrologist and the Utah Division of Wildlife Resources, during a field trip to review the site, have identified that the proposed action may lower the water table in some wet meadows that also contain stock ponds. This could result in the drawdown or elimination of ponds that are known to be used, are potentially used, or were historically used, by spotted frog. This is a potential impact to spotted frog and should be identified as such in the DEIS. Additionally, the DRP with Pipeline alternative has been identified, in the Threatened and Endangered Species Technical Report, as directly impacting spotted frog by temporarily removing 1.6 acres of wet meadow and 0.3 acres of emergent marsh habitat that is known to be occupied. We suggest the following EC for your consideration:

- The CUWCD shall work with the Spotted Frog Conservation Agreement Team in: (1) arranging for proper surveys of potential habitats for the spotted frog within the area where the Proposed Action Alternative is expected to lower groundwater levels, (2) identifying measures that are needed to avoid project associated impacts to the spotted frog, and (3) implementing such measures as may be required to avoid project related impacts.

29.14 3.2.5 (2) - It is our understanding that Jordanelle Reservoir became operational on July 9, 1996. This same comment is also applicable to the last bullet of 3.21.2.1 (1).

29.12 Please see the response to Comment 19.55 concerning leatherside chub. Also please see the Errata Summary for changes to Section 3.5.6.3.2.2 of the Draft EIS on page W 3-90.

29.13 Please see the response to comment 19.65. An environmental commitment has been included.

29.14 Please see the Errata Summary for changes to Section 3.2.5 on page W 3-12.

29.15 3.2.5.5 (2) and (3) - Here it is stated that minimum stream flows of 75 cfs in the Provo River below the Olmsted Diversion to Utah Lake as required in Section 303(c)(3) and (4) of CUPCA were not considered in defining the baseline conditions for this EIS because sources to provide this water have not yet been identified.

An additional sentence could be added here to explain that Sec. 303(c) of CUPCA specifies that after the water rights to provide this minimum streamflow have been acquired that the URMCC in consultation with the Service and UDWR shall determine when the minimum streamflow of 75 cfs can feasibly be maintained continuously and in perpetuity.

The Service has issued a BO concerning the operation of Reclamation's Provo River Project, which requires the annual delivery of minimum flows of 25 cfs in the lower Provo River for flushing, spawning and nursery habitat for the June sucker. This BO included a reasonable and prudent alternative to refine the flow recommendation on the basis of a three-year study. At the end of the three year study period, the Service will determine the permanent block of water to be acquired and delivered for June sucker needs.

29.16 3.2.6.3.2 (11) - It is stated that the URMCC in consultation with the Service will decide where to utilize the increased Strawberry Reservoir inflow for enhancement in Uinta Basin streams.

Sec. 303(b)(1)(C) of the CUPCA states that the URMCC is to consult with both the Service and UDWR.

29.17 3.6.6.3.2 (1), last bullet and 3.6.6.3.2.2 (1) - Mention is made of the potential for bird electrocution on power lines.

This potential would be reduced if proper designs for the power lines are adopted.

29.18 3.5.6.3.2.2(3) - What is the reference for the information about leatherside chub being opportunistic? Rather than adapting, the leatherside chub is more likely surviving in marginal habitat in the Heber Valley.

29.19 3.7.5 - Table 3-35 identifies habitat quality for spotted frog within the impact area of influence as optimal. Is there a reference for this determination or is this a judgement call? The Service does not agree with this statement. The remaining spotted frog populations within the Heber Valley are most likely surviving in marginal habitats as these are the only habitats left available to them.

29.20 Cont. 3.7.5.5(3) - The statement that presence of spotted frogs in the Upper Strawberry River Basin is unlikely because of past rotenone treatments should be amended. The Utah Division of Wildlife Resources contracted Peter Hovingh to survey the amphibian population of Strawberry Valley before the rotenone project of 1991. He found no ranid species in the valley. The Environmental Assessment for the Strawberry Reservoir Treatment Project

29.15 Please see the Errata Summary for changes to Section 3.2.5.5 on page W 3-20. See also the response to Comment 19.30.

29.16 Please see the Errata Summary for changes to Section 3.2.6.3.2 on page W 3-35.

29.17 Please see the response to Comment 29.2 and the Errata Summary for changes to Section 3.6.6.3.2 on page W 3-97 and Section 3.6.6.3.2.2 on page W 3-98. A Standard Operating Procedure has been added to help protect birds from electrocution.

29.18 Please see the response to Comment 19.55 regarding leatherside chub and the Errata Summary for Section 3.5.6.3.2.2 on page W 3-90 of the Draft EIS.

29.19 Section 4.4.5 (page 4-7) of the Threatened and Endangered Species Technical Report indicates that the spotted frog "population is considered to be of concern because of the low population numbers which increase the risk of inbreeding, fragmented habitat which hinders dispersal of young, drying of some potential habitat in the fall and winter making conditions less suitable for frogs and varying water levels during the spring which have caused egg masses to dry up (Ross et al. 1993, Keleher 1995). Please see the Errata Summary for changes to Table 3-35 on page W 3-102.

29.20 Please see the response to Comment 6.10 and the Errata Summary for changes to Section 3.7.5.5 on page W 3-105 of the Draft EIS.

29.20 Cont. stated that, "The western spotted frog (*Rana pretiosa*)...is considered rare in Utah and its status in Strawberry Valley has not been documented". We recommend amending the statement to say that, "there is a lack of historical sightings of spotted frog in the Strawberry River Basin".

3.7.6.3.3 (1) and Table 3-36 - As previously stated, this DEIS was issued prior to issuance of the Service's concurrence letter for a no effect finding for bald eagle. A finding of "no effect" on the bald eagle is contingent upon the adoption of power pole designs that have been previously referenced.

29.21 3.7.6.3.5 - The statement that the proposed action would have no direct or indirect impacts on spotted frog is of concern to the Service. It is our understanding that the proposed action may lower the groundwater two to eight feet in an area where spotted frog have historically been found. No recent, intensive surveys have been conducted in this area to determine whether spotted frog currently use this habitat. While the habitat may be marginal, there is potential for spotted frog to be impacted if they are using the site. Therefore, we recommend changing this statement to read that spotted frog may potentially be impacted by the proposed action.

29.22 3.7.6.3.6 - Table 3-36 states that there will be no net change to spotted frog caused by action (DRP with Pipeline and DRP with Canal) which result in taking, increased stress, displacement and potential reduced reproductive success in spotted frog populations which are already below critical levels. We do not agree with the table. Taking, increased stress, displacement and potential reduced reproductive success in spotted frog populations would cause a net change in the populations.

29.23 3.15.6.4.3 (1) - This summarizes impacts associated with the DRP with Pipeline Alternative, and mentions there would be 0.7 miles of above-ground power lines with 3-foot poles.

We believe that there is a typographical error, and that 30-foot power poles may have been intended. If this is true, designs such as we have recommended for the Proposed Action (DRP) Alternative should be selected to minimize the potential for raptor electrocutions.

Exposed power lines on 3 foot poles would be a hazard to humans and wild and domestic animals. If such plans are pursued, we recommend that these lines be buried.

3.19 (1) - Two ECs that are included here are paraphrased as follows:

- A survey would be conducted prior to construction activities to identify leatherside chub population centers and learn more about the status of the species.
- Areas outside the impact area of influence that contain populations of leatherside chub that would benefit from habitat improvements would be

29.21 Please see the Errata Summary for Section 3.7.6.3.5, page W 3-106. The area is not known to be currently occupied by spotted frog. Please see the Environmental Commitment List (Appendix 1) in the FEIS

29.22 Please see the Errata Summary for changes to Section 3.7.6.3.6, Table 3-36 on pages W 3-107 and W 3-108 in the Draft EIS.

29.23 Please see the Errata Summary for changes to Section 3.15.6.4.3 on page W 3-157.

enhanced and protected in accordance with an agreement to be developed with the Service and UDWR.

29.24 3.19 (2) - It is mentioned that predicted losses of naturally reproducing cutthroat trout in upper Daniels Creek as a result of termination of the DIC diversion is unmitigable.

We suggest modifying this language to state that the loss is unmitigable in the project area but that opportunities to mitigate the loss outside of the impact area shall be explored in cooperation with the Service, UDWR, and other appropriate entities. An EC may be worded as follows:

- Opportunities to mitigate losses of habitat for cutthroat trout in upper Daniels Creek will be developed in cooperation with the Service, UDWR, and other authorities that have jurisdictions over potential mitigation sites.

3.19.4 - This part of the DEIS includes tentative conservation measures to avoid impacts of the project on the spotted frog. As was stated in our discussion on 3.2.6.3.6.2 (1), there are potential impacts from the lowering of groundwater levels that is anticipated with the WCWEP/DRP (Preferred Alternative). These may affect spotted frog habitat.

29.25 Cont. A draft BO on the PRRP (an interrelated project) with conservation measures for the spotted frog has been developed by the Service, and from that document we have paraphrased the ECs for consideration by the CUWCD and URMCC. Should the survey suggested in our EC relative to our discussion of potential impacts with lower groundwater levels demonstrate that the spotted frog is not present, these ECs may not be applicable to the WCWEP. ECs that we developed for the overall WCWEP and PRRP areas combined are as follows:

- Surveys for spotted frog egg masses shall be conducted during the breeding period (April-June) during the year construction is scheduled in order to more accurately identify occupied areas.
- The final project plan and design will avoid and minimize impacts to the spotted frog and its habitats to the maximum extent possible.
- Occupied breeding sites that are near construction zones shall be delineated with orange fencing and posted with signs stating, "conservation area - do not disturb".
- A protocol shall be developed for translocating spotted frogs out of areas that will be drained or directly impacted prior to and during construction.
- Temporary refugia and permanent habitats where translocated spotted frogs can be introduced shall be inventoried at the earliest date possible, and

29.24 Please see the response to comment 16.17.

29.25 Most of the conservation measures that are recommended in Comment 29.25 are presented on page W 3-171, Section 3.19.4 of the Draft EIS. Please see the Errata Summary for changes to Section 3.19.4 on pages W 3-171 and W 3-172.

29.25 Cont. opportunities to enhance habitat conditions for the species shall be promptly initiated and implemented.

- Barriers to prevent translocated spotted frogs from returning to their former habitats shall be maintained between the construction site and adjacent undisturbed habitat throughout the construction period.
- A long-term monitoring plan to determine the success of habitat recovery and relocation efforts shall be developed in cooperation with the Spotted Frog Conservation Agreement Team.
- Should monitoring results demonstrate a need for additional measures to avoid losses of spotted frogs, feasible improvements shall be implemented as quickly as possible.

29.26 3.19.4(4) - This paragraph states that restricting construction activities in areas that are known to be occupied by spotted frog would avoid disturbance of reproduction...and would avoid the mortality of immobile, hibernating individuals. These statements should be amended to state that restricting construction activities will minimize, not avoid disturbance.

29.27 3.21.2.6 (2) - The Service is concerned about the statement that the WCWEP and DRP Proposed Action and interrelated projects will not cause impacts to the spotted frog and its habitats, or to the June sucker. As we have stated previously, potential impacts to spotted frog may occur from implementation of WCWEP and the DRP proposed action due to the lowering of the groundwater. Additionally, the DEIS (3.21.2.2(2)) identifies the PRRP as an interrelated project. The PRRP, is expected to result in potentially significant impacts to spotted frog. Therefore, the spotted frog should be addressed in the cumulative impacts analyses.

29.28 The Service has previously concurred with the determination that WCWEP would not effect the June sucker. However, the Service is concerned about the potential cumulative impacts from the Bonneville Unit of the Central Utah Project on the endangered June sucker. We agree that the June sucker does not occur within the Provo River between Deer Creek and Jordanelle Dams and, therefore, will not be directly influenced by the PRRP. However, the June sucker does use the lower Provo River for spawning and is dependent on appropriate Provo River flushing, spawning, and nursery flows to provide for spawning cues, spawning habitat, successful reproduction, and larval development. The Service has issued a Biological Opinion on the Provo River Project and has determined that Provo River Operations may affect the June sucker because of the potential to affect flows to the lower Provo River. We have determined that any and all affects to the species resulting from the Bureau of Reclamations Provo River Project and the Bonneville Unit of the Central Utah Project will be addressed in either the SFN-Bonneville Unit Biological Opinion or the Provo River Project Biological Opinion. We recommend that a statement to this affect be included in the cumulative impacts analyses discussion.

29.26 Section 3.19.4 on page W 3-171 of the Draft EIS states that "Impacts on spotted frogs could be *minimized* by restricting construction activities in areas that are known to be occupied by spotted frogs." The section also suggests that by restricting construction activities during hibernation, impacts to hibernating individuals would be *avoided*. Similarly, by restricting activities during the breeding season and through the period when most tadpoles have transformed into adults, impacts on reproducing individuals would be *avoided* and impacts on egg masses and tadpoles would be *minimized*.

29.27 Please see the Errata Summary for changes to Section 3.21.2.6 on page W 3-177 and W 3-178. A new section regarding cumulative impacts on spotted frogs from the Proposed Action and interrelated projects has been added. New sections have not been added for the June sucker because the WCWEP, DRP or PRRP would not affect this species. The PRRP would not affect the June sucker because it has a low potential for occurrence in the Provo River in Heber Valley.

29.28 Please see the Errata Summary for changes to Section 3.21.2.6 on page W 3-177.

29.29 3.21.2.6.2 - This section should include a discussion about the potential for eagle electrocutions on power lines that are proposed for the WCWEP Proposed Action Alternative. Losses of perching trees utilized by the bald eagle that are anticipated as a result of the WCWEP alternatives are quite limited although interrelated projects have a greater impact on perching trees.

29.30 Cont.

As a matter of additional information, we have developed suggested ECs from the reasonable and prudent measures and terms and conditions contained in a draft BO on the PRRP which the Service expects to issue shortly. We have developed the following ECs (ECs with * are applicable to WCWEP as well as PRRP):

o* The planning agency shall designate an individual to serve as the contact representative to oversee compliance with terms and conditions set forth in the Service's BO.

o* The contact representative shall ensure that contractors are aware of terms and conditions contained in the Service's BO, and be invested with authority to halt activities that may be in violation.

o* Those involved in the construction and its oversight shall be informed, through an educational program that: (a) the bald eagle is federally listed as a threatened species; (b) explains "take" as defined by the Endangered Species Act, and the potential penalties (up to $25,000 in fines and six months in prison) for taking a listed species; and (c) the terms and conditions set forth in the Service's BO.

o* Project related personnel shall not be permitted to have firearms in their possession while on the site.

o Construction shall be planned in a manner to minimize losses of mature cottonwood trees.

o Cottonwood trees in ROWs shall be salvaged for use in reestablishing cottonwood trees in riparian areas and to provide materials for fisheries habitat improvements.[3]

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[3] This EC expands upon the terms and conditions presented in the BO to include salvaging of materials for fisheries habitat improvements. In general anchoring large cottonwood trees with sufficient stump for keying into banks and extending the root wad into the stream is an effective technique for scouring pools that are used for resting and cover by fish. The limbs are used for cuttings to reestablish cottonwood trees. Techniques for the removal and preparation of salvaged trees need to be developed in consultation with botanists and fisheries habitat improvement biologists.

29.29 As indicated in Appendix 1 of the Final EIS and in the response to Comment 29.2, the environmental commitment would avoid or minimize the risk of electrocution for eagles and other raptors on all new power lines constructed under the Proposed Action and alternatives. Therefore, no new analysis of related cumulative impacts is necessary.

29.30 Thank you for the recommended environmental commitments. All of the WCWEP and DRP-related environmental commitments (marked by an *) recommended in the comment have been added to Appendix 1 in the Final EIS, with the exception of the second bullet on page 14 of the comment letter.

The CUWCD cannot release flows "to maximize habitat". CUWCD will release flows to meet minimum instream flow requirements in the Provo River under baseline conditions and would release target supplemental instream flows in the five Heber Valley streams under the Proposed Action. The Provo River minimum instream flows and the target supplemental flows in the five Heber Valley streams are and would be a major benefit to aquatic resources and wildlife. However, such flows would not *maximize* the habitat of aquatic resources and wildlife. The remainder of this recommended environmental commitment is too vague to follow during the construction and operation of the Proposed Action or DRP alternatives.

As requested by the comment, CUWCD is promoting conditions that benefit threatened and endangered species and other wildlife by implementing the environmental commitments contained in Appendix 1 of the Final EIS, and the mitigation defined in Section 3.19, page W 3-171 of the Draft EIS.

o As appropriate, the floodplain shall be fenced to allow management of cattle grazing and increase the chance for regrowth of cottonwood trees.[4]

o* The CUWCD shall release flows in such a way to maximize habitat and promote conditions that would benefit native vegetation and wildlife habitat, including threatened and endangered and candidate species.[5]

o* Parking and storage areas for equipment and materials used for construction and maintenance shall be confined to disturbed sites that have little or no value to fish and wildlife.

o* Maintenance on equipment used in construction or for post-project maintenance shall be preformed off-site or in designated areas that have little or no value to fish and wildlife.

29.30 Cont.

o* A contingency plan shall be developed in the event of inadvertent spills of petroleum or other toxic substances.[6]

o* Hazardous materials such as explosives, solvents, gasoline, diesel, and lubricants shall be stored in safe areas away from sensitive plant communities and fish and wildlife habitats.

o* In the event of inadvertent spills of toxic substances the National Response Center, U.S. Cost Guard Headquarters, Washington, D.C. (telephone 1-800-424-8802) and the Utah Environmental Response and Remediation Division, 168 North 1950 West, P.O. Box 144840, Salt Lake City, Utah 48114-4840 (telephone 1-801-536-4100) shall be promptly notified.[7]

o* In the event dead, injured, or sick eagles are encountered the Service's Division of Law Enforcement, Salt Lake City, Utah (telephone 1-801-975-3632 and the Utah Division of Wildlife Resources, Central Regional Office, 1115 North Main Street, Springville, Utah 84663 (telephone 1-801-489-5678)

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[4] This EC was presented in comments on 1.11 (3).

[5] An EC regarding maintenance of 125 cfs in the Provo River on page 4 of this letter is also pertinent.

[6] This was not included in terms and conditions of the draft BO on PRRP.

[7] This was not included in terms and conditions of the draft BO on PRRP.

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shall be promptly notified for guidance on procedures for their care or preservation and transport.[8]

o* Notification of dead, injured, or sick eagles shall also be given to the Utah State Field Supervisor, Ecological Services, U.S. Fish and Wildlife Service, 145 East 1300 South, Suite 404, Salt Lake City, Utah 84115 (telephone 1-801-524-5001) within three days of discovery.

o* An annual report that summarizes encounters with dead, sick, and injured eagles shall be provided to the Service. The date, time, and probable or confirmed cause of the injury, mortality or sickness; and other pertinent information shall be included in this report.

o* The Service's Ecological Services Office, Salt Lake City, Utah shall be advised when activities that comply with conditions and conservation measures set forth in BOs are being performed and when they have been met.

29.30 Cont.

o* The benefits associated with implementation of terms and conditions and conservation measures contained in the BO shall be monitored and periodic reports summarizing the findings shall be submitted to the Service

o* Formal consultation on threatened and endangered species shall be reinitiated if necessary to comply with 50 CFR 402.16.

o A monitoring plan for the Ute ladies'-tresses orchid approved by the Service and developed in consultation with Service, Commission, and Utah Natural Heritage Program staff biologists shall be implemented.

o Prior to construction seeds from Ute ladies'-tresses orchids that inhabit the project area shall be collected to serve as a source of new individuals in newly created habitat or to reestablish existing populations if they are extirpated.

o Conditions necessary for continued viability of the Provo River Population of Ute ladies'-tresses orchid shall be maintained, including "artificial" maintenance of habitat conditions, until such activities are no longer deemed by the Service to be necessary or warranted.

o To maintain hydrologic conditions necessary for the existing colonies of Ute ladies'-tresses orchids, project designs shall allow water to overflow into

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[8] Requirements in the BO have been expanded here to include the golden eagle as well as the threatened bald eagle, both of which are protected under the Eagle Protection Act (14 U.S.C. 668-668d) and the Migratory Bird Treaty Act (16 U.S.C. 701-718h). The bald eagle is protected under the Endangered Species Act, although the golden eagle is not.

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occupied side-channels from the new river location. If determined feasible, backwater wetland areas shall be reconstructed near orchid colonies with hydrologic connection to the new river channel.

29.30 Cont.

- The URMCC shall work with the Service to design and manage wetlands reconstructed within the abandoned channel of the Provo River, newly acquired public land, recreation access points, and trails in a manner that will allow establishment and maintain viability of Ute ladies'-tresses orchid colonies while meeting other project purposes.

29.31 Appendix A - A.2.1 (3) - It is stated that control of Canada thistle is especially important in areas that support Ute ladies'-tresses orchid because the thistle forms monocultures that out-compete the orchid.

We believe that this same statement could be made for most of the other non-native thistles addressed in subsequent paragraphs.

29.32 A.3.1 (1) - It is mentioned that desirable plant covers shall be established as soon after construction as possible. Interim seeding of topsoil stockpiles that would be barren for more than a month will be necessary; and permanent seeding of disturbed areas will be conducted at the completion of earth-moving activities. Table A-1 is a list of plants that are being considered for seeding disturbed areas. We recommend that whenever possible, native plants be used in revegetation unless revegetated areas are to be used for agricultural purposes. Non-native species such as smooth brome that tend to spread into areas with native vegetation should be avoided.

29.33 Weeds that are identified as noxious or undesirable would be chemically controlled or hand-removed before they develop seeds or have opportunity to spread and establish large colonies. Fall and spring surveys would be conducted to identify and locate perennial and biennial weeds in their early stages of development. Photographs or drawings of noxious weeds that may occur in the area will be distributed to contractors to help identify weeds and take steps to eradicate them using approved techniques. Here, the word, "noxious" is not used. We do not believe that poison hemlock and purple loosestrife are presently on Utah's Noxious Weed List; however, we agree that effort should be made to eliminate these species from the project area.

There will probably be plants that some will regard as weeds, but that biologists have no interest in seeing controlled. Perhaps it may best to refer to species that are to be controlled as noxious or undesirable plants.

It seems unlikely that weekly surveys immediately after construction would reveal the presence of noxious or undesirable plants. We agree that there should be frequent surveys and that spring and fall surveys to identify and locate perennial and biennial noxious or undesirable plants is appropriate. Likewise, we agree that a program to educate construction

29.31 Please see the Errata Summary for changes to Appendix A, Section A.2.2 on page A-1, Section A.2.3 on page A-2, and Section A.2.4 on page A-2.

29.32 Seed mixtures proposed for revegetation will be developed with the appropriate cooperating agencies and will contain a mixture of seed to meet the objective of the revegetation plan.

29.33 Poison hemlock and purple loosestrife are not listed on Utah's noxious weed list, but these species would be controlled as described in the Noxious Weed Control Plan.

and other personnel who may be able to help identify locations of noxious or undesirable plants in the project area would probably be helpful.

29.34 A.3.3.4 (1) - It is stated that mechanical or hand control of noxious weeds in construction areas would be used as an alternative to herbicide application, and that weeds collected by these methods would be burned or properly disposed of to avoid their spread to other areas.

In the vicinity of sensitive habitats, such as those occupied by the Ute-ladies'-tresses orchid or spotted frog, hand removal would be preferable to the use of herbicides.

29.35 We have developed the following list of ECs for your consideration:

- Noxious weeds and undesirable plant surveys shall be conducted until such time that monitoring demonstrates that they are no longer a problem in the project area and the project is no longer contributing to the spread of these plants.
- Desirable, preferably native, plants that will help control erosion and inhibit the spread of noxious weeds and undesirable plants shall be seeded on disturbed areas as soon as possible after construction is completed.
- Stockpiles of top soil that would remain barren for periods in excess of one-month shall be managed appropriately to control erosion and avoid proliferation and spread of noxious weeds and undesirable plants.
- A program to educate contractors and others who are in field positions in the identification of noxious or undesirable vegetation shall be implemented. The participants shall also be provided with photographs or drawings of these species, and informed of procedures for reporting locations where they are observed.
- Noxious weeds and undesirable plants shall be controlled by chemical, mechanical, hand removal, and biological means, as may be appropriate, with due consideration given for compatibility with wildlife management plans, needs for protecting native plant communities, and avoidance of environmental contamination. Approved procedures and required permits shall be obtained for the controls that are used.
- Noxious and undesirable vegetation in the vicinity of Ute ladies-tresses orchid colonies and spotted frog habitats shall be controlled by methods that avoid or minimize impacts to these species or their habitats.
- Weeds removed by mechanical or hand control methods shall be burned or properly disposed of to prevent their spread to other areas.

29.34 Please see the Errata Summary for changes to Section A.3.4 on page A-4.

29.35 Please see the Environmental Commitment List (Appendix 1) in the FEIS.

We appreciate this opportunity to comment on the DEIS for the WCWEP.

Sincerely,

Reed E. Harris

Reed E. Harris
Utah Field Supervisor

cc: Mr. Michael C. Weland, Executive Director, Utah Reclamation Mitigation and Conservation Commission, 111 East Broadway, Suite 3110, Salt Lake City, Utah 84111
Mr. Ron Johnston, Program Director, CUP Completion Act Office, U.S. Department of the Interior, 302 East 1860 South, Provo, Utah 84606-7317
Geographic Assistant Regional Director (CO/KS/NE/UT), U.S. Fish and Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225

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Comment Letter No. 30

Karen Ricks, Project Manager
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058-7303

Dear Karen,

We support the DEIS on the Wasatch County Water Efficiency Project.

The Wasatch Irrigation Company wants to be a part of the pressurized irrigation system. 30.1

We feel this project should be moved along as quickly as possible. The project will be beneficial to Heber Valley and will be an asset to the participating irrigation companies.

Yours truly,

Vaun Shelton

Vaun Shelton, President
Wasatch Irrigation Company

Responses to Comment Letter No. 30

30.1 Thank you for your input. It will be used in the decision-making process.

3.4 Hearing Comments and Responses

As shown on Table 3-2, only four people addressed the WCWEP and DRP DEIS in testimony presented at the two hearings. Each comment is presented, followed by the response.

3.4.1 Public Hearing Comments — Heber City, Utah July 16, 1996

Witness: Paul Dremann

Comment: "To clarify it, assuming we go to the proposed alternative, I think it should be clarified that the Daniels Replacement Project, accounting of costs for that should only be that part which would minimally satisfy the needs of the Daniel Replacement Project. In other words, if you go to the 30 to 40 million dollar alternative, then set up your system with Daniel, it only takes you 10."

Response: The draft Feasibility Study prepared by the CUWCD dated February 1996 addresses the division of Proposed Action costs between the Section 202 (Wasatch County Water Efficiency Project), 207 (Water Conservation Credit Program) and 303 (Daniel Replacement Project) funding sources. The costs of only those facilities associated with replacement of water to Daniel Irrigation Company are assigned to Section 303.

Comment: "So I would like to see the thing reflect that indeed if something does happen to the Wasatch County Efficiency Study Project, you proceed with the Daniels Replacement."

Response: If something happens to the WCWEP, the CUWCD would not be able to implement the Daniel replacement supply features of the Proposed Action, but rather would need to pursue one of the two DRP alternatives discussed in the EIS. Under the Proposed Action, water efficiency improvements free-up capacity in the Timpanogos Canal that can be used to convey replacement water for DIC. Without the efficiency improvements, the Timpanogos Canal would not be available for DRP purposes, unless it was enlarged. Furthermore, reduced consumption of water under the WCWEP offsets the return flow impacts of terminating the DIC transbasin diversions.

Comment: "The last comment, and without specifics, there was a comment on the Daniels Replacement Project dealing with public involvement in the restoration of the canal systems on the upper Strawberry. We are not aware of any formal or even relatively informal level of public involvement in that work, and we'll have some comments on that. But we feel that should have been more broadly scoped, and we're not aware of how that came to be."

Response: Please see the Errata Summary for changes to Chapter 4, Section 4.3.1.10, page W 4-5.

3.4.2 Public Hearing Comments — Salt Lake City, Utah July 17, 1996

Witness: Paul Dremann

Comment: "All of these factors do not lead up to what we would perceive as a positive fisherman impact on the water. That does mean that adding water to those tributaries would not benefit the water table. It may benefit other areas, but as far as fishery impact, we do not feel so."

Response: Please see the response to Comment 16.1 in letter number 16.

Witness: Jeffrey Appel

Comment: "There are some additional reviews needed, we believe. There's a question as to whether or not this project is going to induce growth in and of itself. I think you need to review the indirect and cumulative impacts underneath, and that has not been done."

Response: Please see the response to Comment 25.4 in letter number 25.

Comment: "And I think you need to look at the alternative of simply pumping water over from Strawberry Reservoir rather than running a pipeline across."

Response: Please see the Errata Summary for changes to Section 1.13.8 on pages W 1-76 and W 1-77.

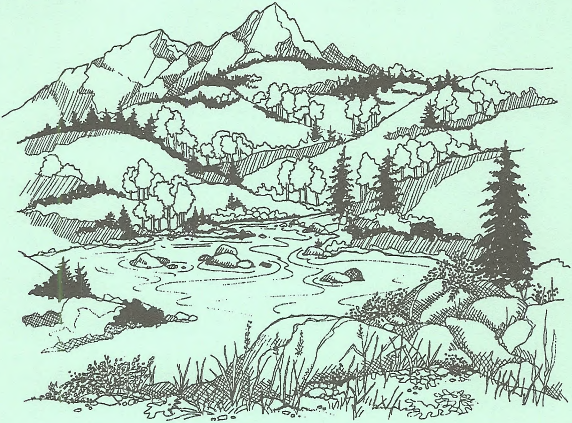
Comment: "The final comment I have is discussed in some of the meetings that we've had that the Jordanelle Dam effectively acts as a plug for water as it moves into the subirrigation realm into the valley. I don't think the review of that issue has been sufficient. It was not reviewed sufficiently in 1979. We don't know how this valley is going to react to that loss of downgrading movement of water. What I'm saying is I believe the baseline for the review of the impacts of this project may be wrong. We may find that the water table is far lower if we don't take that particular issue into account."

Response: Please see the response to Comment 25.1 in letter number 25.

Witness: Dan Potts

Comment: "Now, on the Wasatch County Water Efficiency Project, my main complaint has been and always was that again, the West Side Ditch was mysteriously left out of consideration."

Response: Please see the response to Comment 16.2 in letter number 16.



Wasatch County Water Efficiency Project and Daniel Replacement Project

Final Environmental Impact Statement

Section 4
Errata Summary

Section 4
Errata Summary

4.1 Introduction

This section contains all of the errata that were made as a result of the comments received on the Wasatch County Water Efficiency (WCWEP) and Daniel Replacement Project (DRP) Draft Environmental Impact Statement (Draft EIS or DEIS). It also contains errata made by the EIS team to correct errors found in the Draft EIS or to provide additional clarifying information.

The errata sheets are presented in six subsections: Introduction, Chapter 1, Chapter 3, Chapter 4, References Cited, and Appendix Errata. Corrections to the text are noted by page number, column (left or right), paragraph number, and Section number. The first paragraph in each column is identified as paragraph one even though it may have only been a partial paragraph. A series of bullets are counted as one paragraph. For example, a list of four bullets are all considered as one paragraph. Material that follows and explains a bullet, and is indented the same as the bullet, is considered to be part of the same paragraph as the bullet.

Sufficient text has been duplicated from the DEIS to provide context for the changes made by the errata. Material that has been deleted is shown by a ~~strikeout~~, and text or data that has been changed or added is shown in **bold**. Section headings excerpted from the DEIS are shown in bold as they appeared in the DEIS. However, the errata added two new sections, Section 3.20.4A and Section 3.21.2.6.4 whose headings are also shown in bold.

4.2 Chapter 1 - Description of the Proposed Action and Alternatives

Page W 1-1, left column, paragraph 2, Section 1.1, change to read:

The Proposed Action is the Wasatch County Water Efficiency Project With Daniel Replacement Pipeline (WCWEP With Daniel Replacement Pipeline), which would replace water currently diverted from the upper Strawberry River basin by Daniel Irrigation Company (DIC). The replacement water would come from **water conserved from the CUP agricultural supply for Heber Valley.** ~~water efficiency improvements associated with the Proposed Action and the Tri-Valley Watershed Plan.~~

Page W 1-1, left column, paragraph 3, Section 1.1, change to read:

- **Non-CUP c**~~C~~onserved water would be used to supplement the flows of five Heber Valley streams: Rock Ditch, Spring Creek, lower Lake Creek, London Ditch and Creamery Ditch
- Pumping facilities (**funded by Heber City**) would be provided to allow Heber City to purchase pressurized water for a secondary, outdoor irrigation system that would be installed by the city

Page W 1-2, left column, paragraph 3, Section 1.2.1, change to read:

Restoration of natural flows in the Strawberry River area is the highest priority aquatic mitigation measure in the Aquatic Mitigation Plan for the Strawberry Aqueduct and Collection System (Fish and Wildlife Service Interagency Aquatic Biological Assessment Team 1988). **The Aquatic Mitigation Plan for the Strawberry Aqueduct and Collection System of the Bonneville Unit (SACS) was first prepared in 1979 with refinements in 1984 and a final Plan issued in 1988 by the FWS. The plan made recommendations with analysis for totally mitigating the aquatic impacts**

caused to streams by construction and operation of the SACS. The plan contained the evaluation of four components: 1) acquisition or exchange of additional water rights to provide instream flows, 2) fisherman access to streams, 3) instream habitat improvement measured, and 4) replacement of a trout egg-taking station on Strawberry River within the Strawberry Reservoir enlargement.

The restoration of flows in the upper Strawberry River (Strawberry Exchange) was a very important element of the SACS mitigation plan. It provided restoration of streamflow in 16.3 miles of upper Strawberry River and another 9.8 miles of other streams tributary to Strawberry Reservoir. Restoration of upper Strawberry River flows would mitigate 10,000 angler days of fishing and provide trout spawning habitat in those streams inundated by Strawberry Reservoir. ~~This measure, identified as the Strawberry Exchange in the mitigation plan, would compensate for the loss of trout spawning habitat and stream fishing opportunities caused by inundation from the enlarged Strawberry Reservoir.~~

Page W 1-4, right column, paragraph 3, Section 1.3.2, change to read:

Non-CUP w~~W~~ater conserved under the Proposed Action would be used to supplement the flows of five Heber Valley streams: Rock Ditch, Spring Creek, lower Lake Creek, London Ditch and Creamery Ditch. Map A-1 (see map pocket at back of EIS) highlights the stream reaches that would receive supplemental flows.

Page W 1-4, right column, paragraph 4, Section 1.3.2, change to read:

The Proposed Action includes energy and pumping facilities **(funded by Heber City)** that would allow Heber City to pressurize water for lawn and garden irrigation under a local development known as the Heber City Secondary System (Section 3.1.2). The city would construct a buried pipeline system to replace small, dirt ditches now used to convey irrigation water.

Page W 1-5, left column, paragraph 3, change to read:

1.3.4 The Daniel Replacement Project With Canal Alternative

The DRP With Canal Alternative would replace water currently diverted from the upper Strawberry River basin by DIC with CUP agricultural water from Jordanelle Reservoir. **The source of the replacement supply under this alternative would be CUP agricultural water stored in Jordanelle Reservoir.** Map A-2 (see pocket at back of EIS), shows that replacement water would be diverted at the Timpanogos Diversion and conveyed to the DIC service area through an enlarged Timpanogos Canal, new pumping stations and pipelines. Water currently conveyed by the Timpanogos Canal would continue to be conveyed and delivered by the enlarged Timpanogos Canal.

Page W 1-6, Table 1-1, Section 1.3.6, change to read:

SEE REVISED TABLE 1-1 ON NEXT PAGE

Page W 1-7, Table 1-2, Section 1.3.6, change to read:

SEE REVISED TABLE 1-2 FOLLOWING NEXT PAGE

Table 1-1
Proposed Action and Alternatives Definition Matrix

Features	Proposed Action (WCWEP with Daniel Replacement Pipeline)	Daniel Replacement Project With Pipeline Alternative	Daniel Replacement Project With Canal Alternative	No Action Alternative
Daniel Replacement Water Sources: **Water Conserved From CUP Agricultural Supply** ~~Conserved Water~~	yes	no	no	no
Daniel Replacement Water Sources: CUP Agricultural Water	no	yes	yes	no
Daniel Replacement Water Conveyed w/Canal	yes	no	yes	no
Daniel Replacement Water Conveyed w/Pipeline	yes*	yes*	yes*	no
Facilitates Conversion From Flood to Sprinkler Irrigation	yes	no	no	no
Streams Enhanced with Supplemental Flows	yes	no	no	no
Timpanogos Canal Used for Conveyance w/No Enlargement	yes	no	no	no
Timpanogos Canal Used for Conveyance and Enlarged	no	no	yes	no
Wasatch/Humbug Canal Used for Conveyance	yes	no	no	no

Notes:

*The Proposed Action and Daniel Replacement Project With Canal Alternative would convey Daniel Replacement water with 5 miles of new pipeline while the Daniel Replacement Project With Pipeline Alternative would have 11.9 miles of new pipeline.

Table 1-2
Key Characteristics of Proposed Action and Alternatives[a]*

	Proposed Action (WCWEP With Daniel Replacement Pipeline)	Daniel Replacement Project With Pipeline Alternative	Daniel Replacement Project With Canal Alternative
Area Converted from Flood to Sprinkler Irrigation (acres)	3,675	0	0
Length of New Pipeline, Heber Valley (miles)	42.4	11.9	5.3
Length of New Pipeline, Strawberry Valley (miles)	3	3	3
Length of Existing Canals Rehabilitated (miles)	16.3	0	12.0
Length of Canal Enlarged (miles)	0	0	9.3
New Pumping Stations (number)	10[b]	3	3
Energy Use (kwhr/yr)	3,005,000	832,000	802,000
Existing Sprinkler System Booster Pumps Discontinued (number)	32	0	0
Length of Streams Enhanced, Heber Valley (miles)	9.2	0	0
Length of Streams Enhanced, Strawberry Valley	34.5	34.5	34.5
Power Line Extensions (miles)	3.6	0.7	1
Length of O&M Roads (miles)	1	0	2.8

Notes:

[a]*All values would be zero under the No Action Alternative.

[b] **Heber City will fund the stations associated with developing the Heber City Secondary System.**

Page W 1-8, right column, paragraph 2, change to read:

1.4.2 Project Approach and History

The Proposed Action and alternatives assessed in this EIS are the result of studies performed by the CUWCD. The Wasatch County Water Efficiency Study Preliminary Planning Report, completed by CUWCD in February 1993, identified and described many opportunities for designing and implementing water efficiency improvements in Heber Valley and replacing water diverted by DIC from the upper Strawberry River basin (CUWCD 1993a). The report determined the benefits to the region would be maximized if improved water efficiency and replacement of DIC water supply were planned and operated in conjunction, given their close water supply relationship and geographic proximity. For example, water efficiency improvements would reduce the demand for **CUP agricultural** water in Heber Valley, making conserved water available to be conveyed to DIC via Daniel replacement facilities. The water delivered to DIC, other Heber Valley irrigation companies and the enhanced streams could be conveyed and pumped by common facilities. The coordinated and integrated design and operation of these improvements would minimize the number of new facilities, thus minimizing environmental impacts and construction costs. For these reasons, the Preliminary Planning Report concluded the Proposed Action should integrate facilities that would convey Daniel replacement water.

Page W 1-9, left column, paragraph 1, Section 1.4.2, change to read:

The interrelationships between surface water and groundwater hydrology in Heber Valley have played a key role in the design of the Proposed Action and DRP alternatives. Historically, irrigation water from the Provo River has been diverted in Heber Valley under water rights that are junior to those of users downstream of Deer Creek Reservoir. These diversions have been allowed because water applied via flood irrigation in Heber Valley during relatively high flow months returns to the Provo River and improves the yield of senior downstream water rights during later months when flows are usually lower. The Proposed Action and DRP alternatives have been designed **to continue such benefits and** to avoid reducing Provo River water supplies to senior downstream users. This is **accomplished by (1) storing excess conserved water in Jordanelle Reservoir that may or may not have returned to the river to supply downstream water users at a later time under pre-WCWEP conditions and (2) releasing conserved water and/or CUWCD storage water to make up the difference whenever the WCWEP or DRP operation would reduce the downstream users water supply below the quantity they would have received without implementation of the WCWEP.** ~~done by only storing conserved water when it will not decrease the quantity of water that would have been diverted by lower Provo water users if the irrigation efficiency improvements were not implemented. If the operation of the Proposed Action or a DRP alternative in a previous month decreases the water supply of a downstream user, water would be released from CUWCD storage to supplement that user.~~ Jordanelle and Deer Creek reservoirs would be operated in accordance with the November 1, 1994 Jordanelle-Deer Creek Operating Agreement and to avoid impacts on downstream users.

Page W 1-9, right column, paragraph 1, Section 1.5, change to read:

Table 1-4 defines contracts or agreements that would involve multiple parties and would be needed to construct and operate the Proposed Action and alternatives. Local entities **and CUWCD** would negotiate agreements and contracts required to acquire water rights, facilities and rights-of-way necessary to construct and operate the project.

Page W 1-9, right column, after paragraph 1, Section 1.5, add paragraph to read:

Implementation of the Proposed Action would require the Mitigation Commission to provide the full federal authorization of Section 303(b)(4)(A) and 303(b)(4)(B) of CUPCA ($10,500,000 indexed) to the District for the planning, design, construction, and operation / maintenance / replacement (OM&R) of the Daniel Replacement Pipeline features of the Proposed Action. Through its formal planning process, the Commission intends to reallocate the $500,000 funding ceiling authorized by Section 303(b)(4)(A) (for leasing of Daniel Irrigation Company water rights prior to implementing the WCWEP/DRP), to make that amount available for costs allocated to the Commission for the Daniel Replacement Pipeline portion of the Proposed Action.

Page W 1-9, right column, paragraph 5, change to read:

1.6.1 Water Right Change Applications

The basic premise of the WCWEP is that irrigation efficiency improvements instituted as part of the project would conserve water~~direct-flow diversions~~, which could then be stored , **reregulated and released from** ~~in~~ Jordanelle Reservoir. **Three types of water would be conserved by the WCWEP: non-CUP water diversions from the Provo River, non-CUP water diversions from local tributaries, and water conserved from the CUP agricultural supply in the Heber Valley. Only the conserved CUP agricultural water would be used to supply DIC after its transbasin diversions are terminated. The conserved non-CUP water would be used** ~~These conserved diversions would be released later to provide a supply of water to replace discontinued transbasin diversions to DIC,~~ to supplement the flow of some Heber Valley streams, **and to help avoid impacts** ~~mitigate the effects of changes in Heber Valley return flows~~ on downstream water users. Storage of the conserved direct-flow rights and the release and delivery of this water would require filing and approval of water right change applications with the State Engineer. ~~, as well as agreements between CUWCD, The U.S. Department of the Interior and downstream water users~~.

Page W 1-9, right column, paragraph 6, Section 1.6.1, change to read:

Individual irrigation companies holding direct-flow water rights would file change applications **with the State Engineer to reregulate** ~~that would call for storage of the~~ water in Jordanelle Reservoir at the same priority associated with their direct-flow right.

Page W 1-12, Table 1-4, center column, paragraph 2, Section 1.5, change to read:

Daniel Replacement Water Contract	Daniel Irrigation Company (DIC), **Utah Board of Water** Resources and CUWCD	This agreement would define the terms and conditions by which replacement water is delivered to DIC once the transbasin diversion is terminated under the Proposed Action and alternatives and water rights assigned.

Page W 1-14, left column, paragraph 1, Section 1.6.1, change to read:

These applications also would need to specify a change in place of use to include ~~DIC,~~ Heber Valley streams and the North Fields area. The change applications would go through the State Engineer's review and comment procedures.

Page W 1-14, left column, paragraph 3, Section 1.6.2, change to read:

These procedures could make use of PROSIM's (Provo River Simulation Model) flow calculation routines to estimate monthly changes in inflow to Deer Creek Reservoir resulting from the project. These effects could then be accumulated to estimate their affect on downstream diversions. If the procedures indicated an adverse impact on downstream water users, the River Commissioner could request release of water from conserved water stored in Jordanelle Reservoir to mitigate the impact. These river operational procedures would presumably be developed and implemented as part of the water right change applications described above. **The Provo River is presently operated in accordance with the Deer Creek/Jordanelle Operating Agreement (DC/JOA) (CUWCD 1994c). The river would continue to be operated in accordance with this agreement. Operational changes required to avoid impacts on water users would be developed as part of the water right change applications.**

Page W 1-14, left column, paragraph 4, change to read:

1.6.3 CUP Reservoir Operational Procedures

Because there is a finite amount of storage capacity available in Jordanelle Reservoir, during certain water years, Jordanelle Reservoir would be full when conserved water would be available for storage. This inability to store conserved water would not eliminate the need to **divert and/or** release water to **supplement local streams** ~~replace DIC's transbasin supply~~ or to **avoid** ~~mitigate~~ project impacts. Under these conditions, conserved water **could** ~~would~~ be "pre-released," meaning that CUP water stored in Jordanelle Reservoir could be released when conserved water is unavailable. The released CUP water would subsequently be replaced by water conserved during the following spring. Even if the following year is dry, approximately 15,000 acre-feet of water would be conserved and used to refill borrowed storage in Jordanelle Reservoir.

Page W 1-16, right column, paragraph 5, Section 1.7.1.2.1, change to read:

As of May 1996, about 28 residential subdivisions have been or are expected to be approved for construction in Heber Valley, **excluding the town of Midway**. These projects would be constructed on approximately 2,100 acres ~~(not including projects in Midway)~~ and would have about 1,530 single-family lots and 321 multi-family units.

Page W 1-17, left column, paragraph 5 continuing to right column, paragraph 1, change to read:

1.7.1.2.3 The Tri–Valley Watershed Plan. The NRCS is developing a watershed plan for Heber Valley, Round Valley and the southern portion of Kamas Valley. New water quality management techniques and sprinkler irrigation conversions would be cost–shared by the NRCS and implemented on a voluntary basis by eligible local farmers and ranchers. The plan is scheduled for completion during early **1997**~~1996~~, and the sprinkler irrigation conversions are expected to occur concurrently with construction of the Proposed Action and with Public Law 566 funding. Unlike the Proposed Action, the DRP alternatives and No Action Alternative would not provide pressurized water to Heber Valley irrigation companies and farmers. Therefore, the on-farm conversions to sprinkler systems that are described in Section 3.1.2.1 of this EIS would not occur without the Proposed Action. The water quality management elements of the plan ~~, which would be voluntary and take longer to implement,~~ would focus on education and demonstration projects during the first two years of implementation. **Based on experience with similar projects, NRCS expects participation in the water quality elements to increase after the effects of the demonstration project are observed by local people.** ~~Participation in voluntary~~

~~portions of the plan would probably increase during subsequent years, but the final level of participation is unknown.~~

Page W 1-19, left column, paragraph 2, Section 1.8, change to read:

Two of the three pumping stations along the Wasatch Canal would pressurize water for the Wasatch and Extension irrigation companies. A 75-hp station would be located at the Coyote Lane canal crossing and a 550-hp station would be located along the southern edge of the Wasatch regulating pond. The third station, a 125-hp unit at 950 North in the Valley Hills subdivision, would be reserved for use **and funded** by Heber City to deliver non-culinary water (CUP M&I water and canal water) to Valley Hills subdivision for outdoor irrigation.

Page W 1-27, Figure 1-2, Section 1.8.2.1.1, change as follows:

Delete Figure 1-2 in the DEIS and replace it with the revised figure shown on the next page. The fish passage way shown on Figure 1-2 in the DEIS has been deleted.

Page W 1-41, left column, paragraph 6, Section 1.8.4.1, change to read:

Two of the three pumping stations along the Wasatch Canal would pressurize water for the Wasatch and Extension irrigation companies. A 75-hp station would be located at the Coyote Lane canal crossing and a 550-hp station would be located along the southern edge of the Wasatch regulating pond. The third station **(funded by Heber City)**, a 125-hp unit at 950 North in the Valley Hills subdivision, would be reserved for use by Heber City to deliver non-culinary water (CUP M&I water and canal water) to Valley Hills subdivision for outdoor irrigation.

Page W 1-43, Table 1-11, Section 1.8.4.1, change to read:

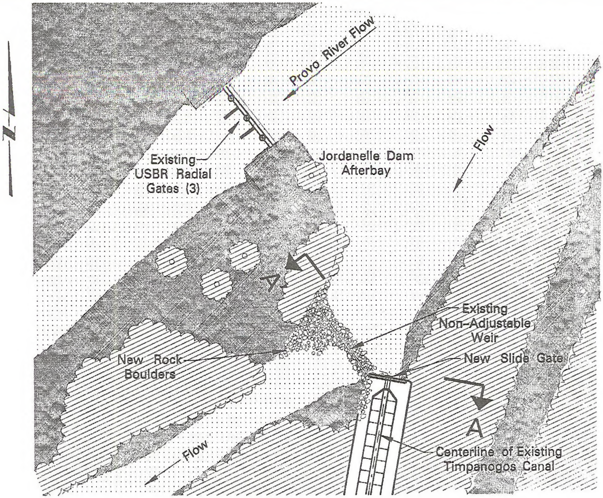
SEE REVISED TABLE 1-11 FOLLOWING NEXT PAGE

Page W 1-44, left column, paragraph 2, Section 1.8.5, change to read:

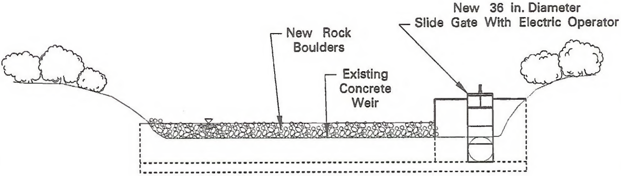
Supplemental instream flows are targets as opposed to mandatory, minimum-flow requirements. While sufficient water is expected to be available to meet the targets most of the time, the available supply would be limited to the amount of water conserved by the Proposed Action in any year minus the amount **needed to avoid impacts to the water supplies of existing users.** ~~delivered to DIC (2,900 acre-feet annual average).~~ Supplemental flow deficiencies of up to 35 percent would likely occur during dry years, which are expected approximately 5 percent of the time based on historic hydrology data used in the Draft Water Resources Technical Report (CUWCD 1996c). This report provides more information on the historic hydrology data used in this EIS and the amount of water that would be conserved by the Proposed Action.

Page W 1-45, right column, paragraph 4, Section 1.8.6, change to read:

Table 1-13 lists the total water diversions and deliveries under the Proposed Action and DRP alternatives on an average annual basis, **within the project impact area of influence.** A 4 percent transmission loss **used by the River Commissioner in administering flows of the river** has been deducted from CUP water delivered from Jordanelle. The Proposed Action would divert an average of 57,240 acre-feet per year from the Provo River. It would **supply** ~~deliver~~ an average of approximately 25,860 acre-feet per year of non-CUP agricultural water, 2,480 acre-feet per year of water to maintain shallow groundwater levels in the North Fields area, 12,130 acre-feet of CUP water, 2,900 acre-feet per year of **water** conserved **from the CUP agricultural supply in Heber Valley** ~~water~~ for Daniel Replacement


N
Provo River Flow
Existing USBR Radial Gates (3)
Jordanelle Dam Afterbay
Flow
A'
Existing Non-Adjustable Weir
New Rock Boulders
New Slide Gate
A
Centerline of Existing Timpanogos Canal
Flow

Plan
(Not to Scale)



Section A'–A
(Not to Scale)

Figure 1–2
Timpanogos Diversion Site Plan and Cross–Section
Under the Proposed Action and DRP Alternatives

Table 1-11
Pumping Station Power Requirements for the Proposed Action and DRP Alternatives

Pumping Station[a]	Serving Utility[b]	Powerline Extension Length (feet)	Service Connection Remarks	Pump Horsepower		
				Proposed Action (WCWEP With Daniel Replacement Pipeline)	DRP With Pipeline Alternative	DRP With Canal Alternative
DRP-1P	HL&P	1,000	Extend 3-phase line southeastward 1,000 feet from Mill Road	None	175	None
DRP-2P	HL&P	2,300	Extend 3-phase line southeastward from DRP-1P 2,300 feet	None	650	None
DRP-1C	HL&P	4,900	Extend 3-phase line eastward 4,900 feet from Mill Road	450	None	735
DRP-2C	HL&P	0	3-phase power at site	c	None	65
DRP-3	HL&P	600	Upgrade 3,400 feet of existing 2-phase line to 3-phase along Hwy 40 from Little Sweden Road and extend line eastward 600 feet from Hwy 40 to site	50	50	50
W1	HL&P	1,800	Extend line 1,500 feet eastward from Wasatch Canal or Hwy 40	75	0	0
W2	HL&P	0	3-phase power at site	125[d]	0	0
W3	HL&P	0	3-phase power at site	550[d]	0	0
T2	HL&P	0	Upgrade 2,400 feet of existing 2-phase line running eastward from Wasatch Canal to 3-phase	15	0	0
T3	HL&P	3,000	Extend line 3,000 feet eastward from Wasatch Canal or Hwy 40	30	0	0
T5	HL&P	3,200	Extend line 3,200 feet eastward from near corner of cemetery	45	0	0
T6	HL&P	1,875	Extend line northward 1,800 feet from 1200 South	685	0	0
T8	HL&P	3,800	Extend line southward 2,400 feet from 1200 South	175	0	0
Total Pumping Station Horsepower				2,200	875	850
Total Powerline Extension Length in Feet				19,175	3,900	5,500
Total Powerline Extension Length in Miles				3.6	0.7	1.0
Average Annual Energy Use				3,005,000 kwhr[ed]	832,000 kwhr	802,000 kwhr
Average Annual Energy Use of Existing Pumps No Longer Needed with the WCWEP				1,110,000 kwhr	- - -	- - -
Net Increase in Average Annual Energy Use				1,895,000 kwhr[ed]	832,000 kwhr	802,000 kwhr

Notes:

[a] Pumping station locations are shown on maps A-1 and A-2 in the map pocket at the back of the EIS.

[b] Serving utility is Heber Light & Power (HL&P).

[c] The DRP-2C pumping capacity of 80 hp is included in the T6 pumping station. The T6 pumping station includes 330-hp pumping capacity for conveying Daniel Replacement water.

[d] **Includes capacity for the Heber City Secondary System (See Section 3.1.2.2).**

[ed] Includes energy for the Heber City Secondary System (See Section 3.1.2.2).

kwhr = kilowatt-hour

and 10,210 acre-feet per year of water to supplement local stream flows. Conveyance losses (water that seeps out of a canal) would total about 3,660 acre-feet per year. WCSSA would be responsible for delivering water after it is diverted from the river under the direction of the River Commissioner appointed by the State Engineer. Additional information on water deliveries and a schematic routing diagram is included in the Draft Water Resources Technical Report (CUWCD 1996c) (see Section 4.3.1).

Page W 1-49, left column, paragraph 2, Section 1.8.6, change to read:

Heber City has requested four delivery points from the Wasatch Canal system to convert the existing ditch conveyance system in the city to a pressure pipeline system, known as the Heber City Secondary System (HCSS) (see Section 3.1.2.2). The Proposed Action facilities would have the capacity to meet the delivery and pressure needs of the outdoor watering system that would be developed **and funded** by Heber City. The water supply for the HCSS would be non-CUP water owned by individuals in Heber City. The Proposed Action would continue to deliver water to Heber City by releasing water from the Wasatch Canal into existing ditches until the city converts to a pipeline system.

Page W 1-53, left column, paragraph 2, Section 1.9, change to read:

The DRP With Pipeline Alternative would be constructed by CUWCD, with funding through the Mitigation Commission (see Section 303(b)(3)(A) of CUPCA). Operation and maintenance would be the responsibility of the Mitigation Commission, its successors or assigns. The federal government would hold title to the facilities and ROWs. ~~The DRP With Pipeline Alternative would be funded by the Mitigation Commission and local funding sources, and constructed, operated and maintained by CUWCD. The federal government would hold title to the facilities and ROWs, and the Mitigation Commission would pay for operation, maintenance and replacement.~~

Page W 1-54, left column, paragraph 4, Section 1.10, change to read:

The DRP With Canal Alternative would be constructed by CUWCD, with funding through the Mitigation Commission (see Section 303(b)(3)(A) of CUPCA). Operation and maintenance would be the responsibility of the Mitigation Commission, its successors or assigns. The federal government would hold title to the facilities and ROWs. ~~The DRP With Canal Alternative would be funded by the Mitigation Commission and local funding sources, and constructed, operated and maintained by CUWCD. The federal government would hold title to the facilities and ROWs, and the Mitigation Commission would pay for operation, maintenance and replacement.~~

Page W 1-56, right column, paragraph 2, change to read:

1.11 The No Action Alternative

The No Action Alternative is the alternative of not implementing the Proposed Action or DRP alternatives. The No Action Alternative would result in no changes in the following:

- Water efficiency in Heber Valley
- Instream flows in Heber Valley streams
- Capacity of the Timpanogos, Wasatch and Humbug canals
- Operation of Heber Valley canals and ditches
- Operation of DIC diversion facilities in the upper Strawberry River basin
- Transbasin diversions from the upper Strawberry River basin to Daniels Creek
- DIC diversions from Daniels Creek

- ~~The Mitigation Commission would alter or reconstruct any existing river diversion facilities located between Jordanelle and Deer Creek reservoirs that are incapable of allowing a minimum of 125 cfs to pass at all times.~~
- Flows in the upper Strawberry River basin.

Page W 1-56, right column, paragraph 3, Section 1.11, change to read:

The **needs** ~~need~~ defined in Section 1.2 would not be met by **the No Action Alternative** and baseline conditions would continue. **As explained later in this section, the obligation to restore the flows in the upper Strawberry River that have been diverted by DIC would remain with the Mitigation Commission.**

The following commitments included in the M&I System EISs related to Jordanelle Reservoir (USBR 1979 and USBR 1987) would still be implemented under baseline conditions and their related effects would continue under the No Action Alternative.

- CUWCD would maintain a minimum streamflow of 125 cfs in the Provo River between Jordanelle and Deer Creek reservoirs

Page W 1-57, left column, after paragraph 2, Section 1.11, add paragraph to read:

The No Action Alternative does not include the commitment to implement the aquatic mitigation measure of restoring the historic stream flows in the upper Strawberry River which would be accomplished by terminating the Daniels Irrigation Company's transbasin diversions and implementation of the Strawberry Exchange. Therefore, if the No Action Alternative is selected, the Mitigation Commission would still have an obligation to implement the Strawberry Exchange in some fashion or to seek legislative relief from this commitment.

Page W 1-66, right column, paragraph 3, Section 1.12.6, change to read:

Ten pumping stations **(the capacity of those associated with the Heber City Secondary System would be funded by Heber City)** would be constructed in Heber Valley under the Proposed Action, and three under the DRP alternatives. Maps A-1 and A-2 (see pocket at back of EIS) show pumping station locations.

Page W 1-68, right column, after paragraph 2, Section 1.12.7, add paragraph to read:

Operation and maintenance costs associated with Section 303 (Daniel Replacement Project) would be paid by the Mitigation Commission, its successors or assigns. Operation and maintenance costs associated with Section 202 (Water Efficiency) and Section 207 (Water Conservation Credit Program) would be paid by users receiving water from the project.

Page W 1-69, right column, Section 1.12.9.1, insert new bullet under Aquatic Resource:

- **Construction in upper Strawberry Valley streams would be minimized during mid-May through mid-July when cutthroat trout spawning and egg incubation could be impacted.**

Page W 1-73, right column, after paragraph 2, Section 1.12.9.1, add to read:

- Impacts on wildlife resources also can be avoided and minimized by hazardous materials procedures included under the health and safety SOPs, the revegetation and erosion control SOPs, and wetlands SOPs.

- **Raptor-safe power poles will be used for new power lines constructed as part of the WCWEP or DRP Alternatives.**

Page W 1-76, right column, paragraph 5, Section 1.13.8, change to read:

This alternative was eliminated from further detailed analysis for the following reasons:

- **CUPCA requires that the restored flows in the upper Strawberry River basin must be released from Strawberry Reservoir into the Strawberry River downstream (Section 303(b)(1)(B) of CUPCA).**

- **This alternative exceeds the authorized cost ceiling in the CUPCA. The USBR prepared a cost estimate for this alternative in 1986 (USBR 1986) in the amount of about $18 million. CUWCD prepared a preliminary cost estimate in 1995 in the amount of about $14 million. These estimates do not include costs associated with NEPA compliance or acquisition of a water supply to replace the quantity of water consumptively used by DIC.**

- **The OM&R costs associated with this alternative would be excessive and would represent a large annual obligation against the Mitigation Commission's Title IV account. The energy cost alone for this alternative is estimated to be in excess of $70,000 annually.**

- **The costs associated with the environmental mitigation for the pumping plant and pipelines in the Strawberry Valley and Daniels Canyon would be substantial.**

~~is not feasible because CUPCA requires that the restored flows in the upper Strawberry River basin must be released from Strawberry Reservoir into the Strawberry River downstream (Section 303(b)(1)(B) of CUPCA). CUPCA also requires the DIC replacement water be conveyed to DIC via a pipeline from Jordanelle Reservoir (Section 303(b)(3)(A) of CUPCA). Furthermore, the cost estimate prepared by the USBR in 1986 for this alternative (USBR 1986) would exceed the funding limitation in CUPCA.~~

Page W 1-77, left column, paragraph 3, change to read:

1.13.10 Purchase DIC Water Rights and Land

The alternative of purchasing DIC's water rights and retiring the land served by DIC was considered. This would allow restoration of flows in the upper Strawberry River basin without building a Daniel Replacement Project. This alternative was studied by the USBR (USBR 1986). **Based on the following issues identified by USBR, CUWCD determined this alternative was not feasible.** ~~which determined it was not feasible for the following reasons:~~

Page W 1-77, right column, paragraph 2, change to read:

1.13.11 Purchase DIC Water Rights Without Retiring Land

This alternative would include the purchase of DIC water rights but without purchasing the land served by DIC. It would be less expensive than the alternative addressed in Section 1.13.10 but would still not be feasible because of the opposition from DIC and Wasatch County, the lack of willing sellers, institutional issues related to the transfer of water rights and the reduction in return flow after irrigation stops on lands served by DIC. This alternative was studied by the USBR **(USBR 1986) and eliminated from further consideration by CUWCD based on the USBR findings.** ~~and eliminated as not feasible (USBR 1986).~~ It would likely require condemnation of the DIC water right. The remaining water supply of DIC would not be sufficient to grow alfalfa, and the predominant crop would shift to grass hay with reduced yields. Up to about one-third of irrigated land in the company could become barren. Existing land use and values make this alternative less feasible than when it was studied by the USBR.

4.3 Chapter 3 - Affected Environment and Environmental Consequences

Page W 3-1, left column, paragraph 1, change to read:

3.1 Introduction

This chapter describes the components ~~The purposes of this chapter are to describe the affected environment (baseline conditions) of resources~~ of the human environment that would be impacted by the Proposed Action and alternatives **plus the on-farm pipelines and sprinkler systems described in Section 3.1.2 of this chapter. These components are referred to as the affected environment (baseline conditions). This chapter also documents** ,~~and to document~~ the environmental consequences (direct, indirect and cumulative impacts) on the quality of the human environment under the Proposed Action and alternatives **plus the on-farm pipelines and sprinkler systems.**

Page W 3-5, left column, paragraph 1, Section 3.1.2, change to read:

The WCWEP includes construction of pumping stations that would provide pressurized water for these local development projects under the Proposed Action. The DRP alternatives and the No Action Alternative would not include facilities to pressurize water for either of these two development projects. The timing of implementation of the Heber City Secondary System (HCSS) is dependent on the timing of implementation of the Proposed Action. The HCSS would rely on pumping facilities **(funded by Heber City)** constructed under the WCWEP and therefore could not precede the WCWEP. Water would be supplied to lands in Heber City from the Wasatch Canal through existing dirt ditches until the HCSS is constructed.

Page W 3-5, left column, paragraph 3, Section 3.1.2, change to read:

The conveyance system of the WCWEP would not have capacity to deliver the 17th-class high-flow river water to farms in Heber Valley, thereby ensuring that water would be conserved to supply ~~replacement water to Daniel Irrigation Company (DIC) and~~ supplemental water to streams to be enhanced under the Proposed Action.

Page W 3-6, left column, paragraph 2, Section 3.1.2.1.2, change to read:

A watershed plan called the Tri-Valley Watershed Plan is currently being developed. Some on-farm irrigation systems would be constructed in Heber Valley concurrently with the WCWEP, and additional on-farm irrigation systems may be constructed in ~~Round Valley (Wallsburg) and~~ South Kamas Valley (Francis-Woodland), and other areas in Heber Valley not included in WCWEP, as part of the Tri-Valley Watershed Plan.

Page W 3-7, left column, paragraph 4, Section 3.1.2.2, change to read:

Heber City has proposed to acquire the water shares of the individuals in the town and to construct the HCSS to distribute non-culinary water to residents in the town via pressurized pipelines, thereby conserving both culinary and non-culinary water supplies to help meet future growth needs. **Since Heber City has acquired shares from local water companies at a lower cost than CUP M&I water i**~~It~~ is unlikely, but possible, that Central Utah Project (CUP) M&I water would be conveyed through the HCSS. Heber City has made a request (Sowby and Berg Consultants 1993b) for four delivery locations from the WCWEP:

Page W 3-7, right column, paragraph 3, Section 3.1.2.2, change to read:

Implementation and funding of the HCSS is the responsibility of Heber City. Two pumping stations (W2 and W3, see Table 1-11, Section 1.8.4.1 in Chapter One) included in the Proposed Action would improve the ability of Heber City to implement the HCSS. All of pump station W2 and a portion of W3 (90 horsepower of the 550 required for the HCSS) would be funded by Heber City. ~~Implementation and funding of the HCSS is independent of the Proposed Action, but the pumping facilities included in the Proposed Action would improve the ability of Heber City to implement the HCSS.~~ Until the HCSS is implemented, landowners who have irrigation shares of the Wasatch Irrigation Company and who also own land in Heber City would continue to receive their irrigation water for their lawns from existing dirt ditches from the Wasatch Canal.

Page W 3-8, left column, paragraph 1, Section 3.2.1, change to read:

Water will continue to be distributed to recognized water right holders by the duly appointed river commissioner(s) consistent with the rights as defined by State law~~, including approved change applications as discussed herein~~.

Page W 3-8, left column, paragraph 2, Section 3.2.1, change to read:

The on-farm water efficiency improvements within the WCWEP area described in Section 3.1.2.1 as part of the Tri-Valley Watershed Plan would occur concurrently with implementation of the Proposed Action. All water resource impacts described in this EIS for the Proposed Action (WCWEP With Daniel Replacement Pipeline) include the impacts of the on-farm improvements. **Since the DRP alternatives would not include pipelines and pump stations to deliver water to Heber Valley farms, these** ~~Under the DRP alternatives, the on-farm water efficiency improvements of the Tri-Valley Watershed Plan would likely be infeasible, and PL83-566 funding would likely not be available to landowners in Heber Valley. The DRP~~ alternatives~~, therefore,~~ do not include the water resource impacts of the on-farm improvements.

Page W 3-8, right column, paragraph 6, change to read:

3.2.2.1 Surface Water Issues

Following are surface water issues that were eliminated from further analysis and reasons for their elimination:

- What impacts would the Daniel Replacement Project have on water rights exchanges and who would negotiate the exchanges with the Utah State Engineer's Office?

  The Proposed Action and alternatives would not include water right exchanges within the Provo River watershed and thus would not impact such exchanges. No new water right or exchange applications would be filed in the Provo River watershed. Under the Proposed Action, all changes in water diversions in Heber Valley would be implemented by change in place of use applications by the existing water right holders. DIC would assign its interest in the waters of the Strawberry River basin (as set forth in Diligence Claim No. 4 to the CUWCD) in exchange for a replacement water supply from Jordanelle Reservoir. The replacement supply would come from **CUWCD agricultural water conserved under Section 207 of CUPCA.** ~~water conserved by water right holders in Heber Valley.~~

Page W 3-9, left column, paragraph 1, Section 3.2.2.1, change to read:

- Who would file change-in-place-of-use applications with the State to include the DIC, North Fields and local streams that would receive supplemental water?

Individual irrigation companies would file change-in-place-of-use applications with the State Engineer's Office. This issue was eliminated from further analysis because filing change-in-place-of-use applications would not have any impacts on water resources. ~~Under the DRP alternatives, the replacement supply would come from uncontracted Bonneville Unit CUP agricultural water in Jordanelle Reservoir and would not affect any existing water rights.~~

Page W 3-12, left column, paragraph 2, Section 3.2.5, change to read:

Baseline conditions used in this analysis are future conditions that would occur if the WCWEP and DRP are not implemented when Jordanelle Reservoir ~~becomes fully operational and~~ reaches full water demand levels, as set forth in the Final Supplement to the Final Environmental Impact Statement on the Central Utah Project, M&I System Bonneville Unit (USBR 1987), which was completed before construction of the reservoir. Since CUP water deliveries and some increased irrigation efficiencies would occur under the baseline conditions, baseline hydrology is not the same as existing conditions.

Page W 3-17, right column, paragraph 2, Section 3.2.5.4.1.1, change to read:

Natural flow during the winter, when transbasin diversions do not occur, is about **3** ~~2~~ cfs, based on the limited data available from the USGS gage. Winter is the period of minimum flow in the creek.

Page W 3-17, right column, paragraph 3, Section 3.2.5.4.1.1, change to read:

The Whiskey Springs picnic area is the point of peak flow in Daniels Creek. The channel is normally gaining flow above this point as a result of springs and seepage from the canyon rocks. Below the **picnic area**~~campground~~, channel infiltration reduces the creek flow as it enters the Heber Valley alluviums. Flow measurements taken by the CUWCD during 1994 documented the losses in the creek channel between the Whiskey Springs picnic area and the points of irrigation diversion. Channel losses were consistently about 1.5 cfs between the **picnic area** ~~campground~~ and the points of irrigation diversion throughout the range of flows measured. Therefore, peak flow in Daniels Creek near the picnic area is estimated to be 1.5 cfs greater than the flows listed above.

Page W 3-19, right column, paragraph 3, Secton 3.2.5.4.2, change to read:

Minor tributaries affected by the Proposed Action include Rock Ditch, London Ditch, Creamery Ditch and Spring Creek. These **ditches and** creeks are shown on Map 3-3 (Section 3.2.4). This section provides additional information concerning baseline flows in each of the streams that would be directly affected by the Proposed Action, except Daniels Creek, which is discussed separately in Section 3.2.5.4.1.

Page W 3-19, right column, paragraph 4, change to read:

3.2.5.4.2.1 Rock Ditch. As shown on Map 3-3, Rock Ditch diverts water from the Wasatch Canal about 2,000 feet below the Wasatch Diversion on the Provo River. This **ditch**~~creek~~ supplies irrigation water to the North Fields Irrigation Company and is a conveyance facility for Provo River water that is discharged into Spring Creek near Heber City for use by other irrigation companies. The highest flows in Rock Ditch occur near the turnout from the Wasatch Canal. The flow of the **ditch**~~creek~~ is reduced at the junctions with headworks of the Middle and Westside ditches and the Rock 4 Ditch.

Page W 3-20, right column, paragraph 4, Section 3.2.5.5, change to read:

Section 303(c)(3) and (4) of CUPCA requires the minimum flow in the reach of the lower Provo River from Deer Creek Reservoir to the Olmstead Diversion to eventually be 100 cfs. It also requires the minimum flow below the Olmstead Diversion to Utah Lake to eventually be 75 cfs. **After the water rights to provide this minimum streamflow have been acquired, Section 303 (c) of the CUPCA states that the 75 cfs flow "shall be provided continuously and in perpetuity from the date first feasible, as determined by the Mitigation Commission in consultation with the United States Fish and Wildlife Service and the Utah State Division of Wildlife Resources."** However, baseline conditions in this EIS were defined by assuming the 75 cfs minimum flow requirement is not in effect. It is too speculative at this time to identify necessary and related assumptions needed to define hydrology conditions (in the impact area of influence) once the 75 cfs requirement is implemented. CUWCD has not fully identified a water source for meeting the 75 cfs instream flow in the lower reach of the river at this time. Pursuant to Section 302(a) of the Central Utah Project Completion Act (CUPCA), "The District shall acquire . . . by purchase from willing sellers or exchange, twenty-five thousand acre-feet of water rights in the Utah Lake drainage basin . . . Water purchase which would have the effect of compromising groundwater resources or dewatering agricultural lands in the Upper Provo River areas should be avoided." Based on the direction of the CUPCA, CUWCD would make every effort to obtain all water rights for the 75 cfs instream flow from areas within the Utah Lake drainage without compromising water resources in the Upper Provo River areas. Purchase of these water rights would, therefore, not affect water rights in Heber Valley, where the WCWEP and DRP is proposed, and would not affect the comparison of impacts of the alternatives in the Heber area.

Page W 3-23, right column, paragraph 1, Section 3.2.5.8, change to read:

The benefits of Heber Valley diversions and the basin's regulation of surface flows is recognized by the senior water right holders downstream of Deer Creek Reservoir in Utah County. **The Morse Decree (Morse Decree 1921) improves the water supply of downstream water users by using Heber Valley groundwater storage to delay the return flows to downstream water users. The Morse Decree identifies Provo Division and Wasatch Division rights on the Provo River. Water distribution is performed according to a class or priority date, depending on whether the right under which water is diverted is a decreed right or established after the decree.** ~~As stipulated in the Morse Decree (Morse Decree 1921), they allow these diversions by the "junior" water-right holders in Heber Valley to continue as long as the water returns for use downstream.~~

Page W 3-25, right column, paragraph 2, change to read:

3.2.5.8.3 **Wells and Springs.** About 640 active and inactive water supply wells — most of them 100 to 250 feet deep — are scattered throughout the Valley. Depth to water in these wells ranges from less than 10 feet to more than 250 feet. The total pumping by all of the wells in the valley averages **a combined total of** about 1.2 cfs, or 870 acre-feet per year (UDNR 1991). Nearly all wells are used for single-family domestic and livestock purposes. Domestic well pumping is typically restricted to less than 1.5 acre-feet per family by the Utah Division of Water Rights.

Page W 3-28, left column, paragraph 6, Section 3.2.6.3.1, change to read:

DIC would receive an average of 2,900 acre-feet per year of **water conserved from the CUP agricultural supply in the Heber Valley** ~~water~~ as replacement water. **This would be** ~~,~~ based on an agreement between the CUWCD, DIC and Utah **Board**~~Department~~ of Water Resources, which **would** establish~~es~~ terms for terminating diversions from the upper Strawberry River basin **and delivering replacement water to DIC.**

Page W 3-28, right column, paragraph 2, Section 3.2.6.3.1, change to read:

An average of 12,100 acre-feet per year of CUP agricultural water would be available to the other irrigation companies in Heber Valley. These companies would conserve sufficient quantities of **their CUP agricultural supply to provide replacement water for DIC and would conserve enough of their non-CUP water supply to meet the target supplemental flows in most years.**~~water from their existing water supplies (through decreased diversion demands) to provide water for the DRP and target local instream flows.~~

Page W 3-28, right column, after paragraph 2, Section 3.2.6.3.1, add paragraph to read:

The Proposed Action would not cause a significant loss of water from the Provo River System. The average annual depletion of 2,900 acre-feet resulting from termination of the DIC transbasin diversions is made up by a reduction in the consumption of Heber Valley return flows of an annual average of 3,000 acre-feet. This is because not all of the unconsumed and applied irrigation deliveries make it back to the Provo River or to Deer Creek Reservoir. It is estimated that approximately 12 percent of irrigation water that is not consumed by crops on the land to which it was applied is lost from the river system. This water is consumed by vegetation on other lands from runoff or where return flows in shallow groundwater areas sub-irrigate vegetation, and to direct evaporation in ponded seepage areas. On an annual average basis, the 12 percent loss of Heber Valley return flows is estimated to total 8,700 acre-feet under baseline, and 5,700 acre-feet under the Proposed Action.

Page W 3-32, left column, paragraph 1, Section 3.2.6.3.1, change to read:

An average of about 23,700 acre-feet of water per year would be conserved as an indirect result of the Proposed Action. This does not include the 2,480 acre-feet provided to the North Fields, or an additional 510 acre-feet used to meet losses in the Timpanogos Canal associated with conveyance of the DRP supply to DIC. **An annual average of 2,900 acre-feet of water conserved from the CUP agricultural supply** ~~Conserved water~~ would meet the needs of the replacement supply to DIC. **A portion of the annual average of 20,800 acre-feet of conserved non-CUP water supplies would meet the needs of** ~~and~~ local streams that would receive supplemental water. The remaining conserved water would be temporarily regulated in Jordanelle Reservoir and released down the Provo River to match the timing in which it would have returned to the river under baseline conditions so water supplies of downstream users would not change.

Page W 3-32, right column, paragraph 1, Section 3.2.6.3.2, change to read:

- A change in livestock water supply source from canals to watering troughs. **Two pipelines, totaling 3 miles in length,** ~~A 3-mile buried pipeline~~ would be constructed to divert water from a spring to supply **six**~~four~~ livestock watering troughs. About 2 acre-feet of water would be diverted annually from the spring.

Page W 3-33, Table 3-10, Section 3.2.6.3.1, change to read:

SEE REVISED TABLE 3-10 ON NEXT PAGE

Page W 3-35, left column, paragraph 3, Section 3.2.6.3.2, change to read:

The Mitigation Commission, in consultation with the Fish and Wildlife Service (FWS) **and the Utah Division of Wildlife Resources** will decide where to utilize the increased Strawberry Reservoir inflow for stream flow enhancement.

Page W 3-38, left column, paragraph 1, Section 3.2.6.3.3.2, change to read:

The source of the supplemental water supply for these streams would be bypass flows diverted from the Provo River and conserved irrigation water made available by the Proposed Action. Conserved irrigation water **(conserved from non-CUP water diversions from the Provo River and non-CUP water diversions from local tributaries)** would be regulated in Jordanelle Reservoir and released to the streams when needed to meet target instream flows recommended by the Fishery Technical Advisory Committee established by the CUWCD during the plan formulation stage.

Page W 3-49, right column, paragraph 2, Section 3.2.6.3.7, change to read:

Water Resources Technical Report Figure 4-9 shows that there is no average drawdown on Jordanelle Reservoir and a 100 acre-feet per year average drawdown on Deer Creek Reservoir, over the study period. This is because modeled reservoir levels in both Jordanelle and Deer Creek reservoirs under the Proposed Action have recovered to very near baseline levels by the end of the study period. Table 3-14 indicates that a~~A~~verage Jordanelle Reservoir storage levels would be approximately 8,600 acre-feet less than baseline storage levels and Deer Creek Reservoir storage levels would be 1,100 acre-feet less than baseline levels. **In actual operation of the Proposed Action, reservoir drawdowns would be limited to levels that would not adversely impact CUP and non-CUP deliveries.**

CUP and non-CUP deliveries to water users downstream of Deer Creek Reservoir would not change from baseline amounts. Although Provo River flows between Jordanelle and Deer Creek reservoirs would change slightly because of the changes in diversions and return flows, average annual river flows below Deer Creek Reservoir would not change. Supplemental flows placed in five Heber Valley streams and ditches would increase flows in these streams over baseline conditions.

Page W 3-50, right column, paragraph 4, Section 3.2.6.4.4, change to read:

Provo River flow below Deer Creek Reservoir to the Olmstead Diversion would be reduced by an average of 4~~3~~ cfs, or 1 percent of the total.

Table 3-10
Water Indirectly Conserved by the Proposed Action (WCWEP With Daniel Replacement Pipeline)

	Average (acre-feet)
Conserved Water	
Non-CUP Water Conserved From Provo River Non-CUP Supply	**10,700**
Non-CUP Water Conserved From Local Tributaries	**10,100**
Water Conserved From CUP Agricultural Supply in Heber Valley	**2,900**
~~Reduced Provo River Non-CUP Diversions~~	~~13,600~~
~~Reduced Tributary Diversions~~	~~10,100~~
Total Conserved Water	23,700
Provo River Bypass Flows	7,000
Total Available Supply	30,700
Conserved Water and Bypass Flow Use	
Daniel Replacement Project Supply	2,900
London Ditch Supplemental Flow[1]	600
Creamery Ditch Supplemental Flow[1]	600
Rock Ditch Supplemental Flow[1, 2]	9,400
Undiverted Spring Creek Flow[3]	10,000
Undiverted Provo River Flow	2,000
Conserved Water Released from Jordanelle to Provo River	5,200
Total Conserved Water and Bypass Flow	30,700

Notes:

[1] Lake Creek supplemental flow is comprised of instream outflow from Rock, London, and Creamery Ditches

[2] Rock Ditch Supplemental Flow includes supplemental flow for Spring Creek

[3] Undiverted Spring Creek Flow is used to meet target instream flow requirements for Spring Creek

Page W 3-53, left column, paragraph 1, Section 3.2.6.4.5, change to read:

Average total inflow and outflow to Deer Creek Reservoir would be reduced an average annual 3 cfs compared to baseline conditions. Total annual average inflow from Heber Valley **(includes Provo River, Daniels Creek and groundwater inflow)** would be reduced from 419 cfs to 416 cfs.

Page W 3-53, right column, paragraph 7, change to read:

3.2.6.4.7 Impact Summary. Streamflows in tributaries in the Strawberry River basin would return to natural flow conditions. Inflow to Strawberry Reservoir would increase by an average annual 2,900 acre-feet per year and stream flow in Daniels Creek above irrigation diversions would decrease by approximately 2,900 acre-feet per year. The amount of CUP **agricultural** irrigation water available to irrigators in Heber Valley would be reduced by 2,900 acre-feet from an average of 12,100 acre-feet per year to an average of 9,200 acre-feet per year. Decreased availability of CUP agricultural water would increase average annual irrigation shortages from approximately 3,280 acre-feet per year to approximately 4,190 acre-feet per year. No changes would occur to municipal and industrial water users above Deer Creek Reservoir or any type of water users below Deer Creek Reservoir, **because corrective measures, which are part of the design of the alternative, would be implemented.**

Page W 3-54, left column, paragraph 4, change to read:

3.2.6.5 Daniel Replacement Project With Canal Alternative

3.2.6.5.1 Water Supply Availability. An annual average of about 3,410 acre-feet of water would be needed to provide the **2,900** acre-feet **of** replacement supply to DIC. ~~which means less water would be available for contracting to other irrigation companies in Heber Valley~~. About 15 percent of the **3,410 acre-feet (510 acre-feet)** ~~DRP supply~~ would be lost to seepage in the Timpanogos Canal. An additional 510 acre-feet of CUP agricultural water per year (2,900 acre-feet delivered, plus 510 acre-feet in losses for a total of 3,410 acre-feet) would be subtracted from the CUP agricultural supply available for contracting to WCSSA, **as compared to the DRP with Pipeline alternative.** This would result in an average CUP agricultural supply of about 8,690 acre-feet per year.

Page W 3-57, left column, paragraph 6, Section 3.3.1, change to read:

These impact topics cover the primary types of water quality impacts that could occur from surface water and groundwater changes caused by the Proposed Action and alternatives. **The evaluation focused on water quality issues associated with nutrients (total phosphorus and nitrates), sediment (total suspended solids), herbicides and temperature because these parameters reflected the water quality concerns expressed during scoping, and the Proposed Action and alternatives do not include activities expected to affect other parameters.** Pollutant loads to Deer Creek Reservoir are a primary focus of the water quality analysis because they are an existing concern at the reservoir, and the Proposed Action and alternatives may affect upstream hydrology and runoff patterns.

Page W 3-58, left column, paragraph 2, Section 3.3.5, change to read:

This section describes the baseline water quality conditions that would occur in the future when Jordanelle Reservoir reaches full water demand levels. ~~This section defines the water quality environment that would be affected by the Proposed Action and alternatives. The affected environment is the same as baseline conditions.~~

Page W 3-58, right column, paragraph 5, change to read:

3.3.5.2.2 Nutrients and Sediment. Baseline concentrations of TP, total suspended solids (TSS) and NO_3 in valley streams and canals are presented in Table 3-20. The effects of existing nonpoint source pollution activities in Heber Valley are reflected in the existing monitoring data, and therefore are reflected in baseline conditions presented in Table **3-20**~~3-19~~.

Page W 3-60, right column, paragraph 2, Section 3.3.6.1, change to read:

Since there are no **numeric** state standards for TP and TSS concentrations and loads, significance criteria for these parameters were not developed.

Page W 3-68, right column, paragraph 3, change to read:

3.4.5.1 Wet Meadow Complex

The wet meadow complex totals 1,613 mapped acres, of which 80 percent is wetland. This mapping unit encompasses the most wetland area — about 1,290 acres, or **69**~~20~~percent of the total wetland area in the impact area of influence.

Page W 3-68, left column, paragraph 3, change to read:

3.4.5 Affected Environment (Baseline Conditions)

The baseline conditions used for wetlands are the same as existing conditions.

Page W 3-70, left column, paragraph 5, Section 3.4.5.1, change to read:

The common plant species include: spreading bentgrass *(Agrostis stolonifera),* water sedge *(Carex aquatilis),* Nebraska sedge *(Carex nebrascensis)*, blackcreeper sedge *(Carex praegracilis)*, spikerush *(Eleocharis* spp.), wiregrass *(Juncus arcticus)*, Nevada rush *(Juncus nevadensis)* and Kentucky bluegrass *(Poa pratensis).*~~*(Poapratensis).*~~

Page W 3-70, right column, paragraph 2, Section 3.4.5.3, change to read:

Emergent marsh occurs in scattered, small areas generally adjacent to and downstream of the **Midway** ~~Utah State~~ Fish Hatchery and in roadside ditches along Highway 40 north of Heber City. These marshes are 100 percent wetland and cover about 44 acres.

Page W 3-71, right column, paragraph 5, Section 3.4.6.3, change to read:

About 22.8 acres of wetlands would be disturbed or permanently removed under the Proposed Action. In Heber Valley, 20.7 acres of wet meadow wetlands **(which have low wetland functions and values)** would be indirectly converted to upland from groundwater **elevation** drawdown (see Map A-4 in pocket at back of EIS).

Page W 3-72, top portion of page, Table 3-27, Section 3.4.6.3, change to read:

~~Table 3-27~~
~~Summary of Adverse and Beneficial Wetland Impacts Under the Proposed Action~~
~~(WCWEP With Daniel Replacement Pipeline)~~

~~Impact Type~~	~~Wet Meadow (acres)~~	~~Emergent Marsh (acres)~~	~~Riparian Woodland (acres)~~	~~Shrub Wetland (acres)~~	~~Total (acres)~~
~~Indirect adverse impacts — Heber Valley and upper Strawberry River basin~~	~~20.7~~	~~0~~	~~2.1~~	~~0~~	~~-22.8~~
~~Created wetlands in upper Strawberry River basin~~	~~0~~	~~3.4~~	~~0~~	~~2.6~~	~~6.0~~
~~Enhanced wetland quality and functions — upper Strawberry River basin~~	~~36.8~~	~~0~~	~~0~~	~~33.6~~	~~+70.4~~
~~Net change in wetland acres — Heber Valley and upper Strawberry River basin~~	~~+16.1~~	~~+3.4~~	~~-2.1~~	~~+36.2~~	~~+53.6~~

Table 3-27
Summary of Adverse and Beneficial Wetland Impacts Under the Proposed Action
(WCWEP With Daniel Replacement Pipeline)

Impact Type	Wet Meadow (acres)	Emergent Marsh (acres)	Riparian Woodland (acres)	Shrub Wetland (acres)
Lost wetlands - Heber Valley	20.7	0	0	0
Lost wetlands - upper Strawberry River basin	0	0	2.1	0
Created wetlands - upper Strawberry River basin	0	3.4	0	2.6
Enhanced wetland quality and functions - upper Strawberry River basin	36.8	0	0	33.6

Page W 3-72, left column, paragraph 2, change to read:

3.4.6.3.1 Wet Meadow. A total of 20.7 ~~22.6~~ acres of wet meadow would be impacted by the Proposed Action.

Page W 3-72, right column, paragraph 1, Section 3.4.6.3.1, change to read:

However, about 20.7 acres of wet meadow wetland could be converted to upland by lowering groundwater elevations associated with converting from flood to sprinkler irrigation. As groundwater levels recede because of changes in irrigation practices, wet meadow vegetation may be gradually replaced over an estimated 3 to 5 years by upland species that are adapted to less water. Wetland specialists investigated the 20.7 acres of wet meadow wetlands and determined these areas provide limited wetland functional value. **Additional field investigations were conducted on June 27, 1996 with representatives of**

the EPA and COE, and on August 16, 1996 with representatives of the Division of Wildlife Resources and FWS. These specialists concurred that these areas have low wetland functions and values. This private property is used for livestock grazing and hay production. Flood irrigation and upgradient drainage supports wetland vegetation. Vegetation is limited to a monoculture of herbaceous species, and soils are sands and gravels. There is very little habitat provided for wildlife. Map A-4 (in pocket at back of EIS) shows the extent of these impacts and explains why other wetlands would not likely be impacted by the groundwater **elevation** drawdown. Based on ~~preliminary~~ information received from the COE, **the predicted loss of 20.7 acres of Heber Valley wetlands from groundwater elevation drawdown would not be regulated under Section 404 of the Clean Water Act because the drawdown is related to irrigation practices, which do not require a 404 permit. The predicted loss of these low function and value wet meadows would be a significant impact and would not be mitigated.** ~~the potential wetland impacts from groundwater elevation drawdown would not be regulated under Section 404 of the Clean Water Act because the drawdown is related to irrigation practices for which a 404 Permit is not required.~~

Page W 3-74, right column, paragraph 4, change to read:

3.4.6.3.6 Impact Summary. About 20.7 acres of wetlands in Heber Valley would be indirectly converted to upland by lower groundwater elevations under the Proposed Action. **The predicted loss of these low function and value wetlands would be a significant impact.** About 2.1 acres of riparian woodland would be converted to upland in the upper Strawberry River basin from eliminating flows in existing canals. Other wetlands would be enhanced in the upper Strawberry River basin. Table 3-27 summarizes adverse and beneficial wetland impacts by wetland type and acreage.

Page W 3-78, top portion of page, Table 3-28, Section 3.4.6.4.5, change to read:

~~Table 3-28~~
~~Summary of Adverse and Beneficial Wetland Impacts~~
~~Under the Daniel Replacement Project With Pipeline Alternative~~

~~Impact Type~~	~~Wet Meadow (acres)~~	~~Emergent Marsh (acres)~~	~~Riparian Woodland (acres)~~	~~Shrub Wetland (acres)~~	~~Total (acres)~~
~~Temporary direct adverse impacts along pipeline corridor restored under SOPs~~	~~6.6~~	~~0.3~~	~~0~~	~~0.02~~	~~6.9~~
~~Indirect adverse impacts — Heber Valley and upper Strawberry River Basin~~	~~0~~	~~0~~	~~2.1~~	~~0~~	~~-2.1~~
~~Wetlands created in upper Strawberry River basin~~	~~0~~	~~3.4~~	~~0~~	~~2.6~~	~~6.0~~
~~Enhanced wetland quality and functions — upper Strawberry River basin~~	~~36.8~~	~~0~~	~~0~~	~~33.6~~	~~+70.4~~
~~Net change in wetland acres* — Heber Valley and upper Strawberry River basin~~	~~+36.8~~	~~+3.4~~	~~-2.1~~	~~+36.2~~	~~+74.3~~

~~Note:~~

~~*The 6.9 acres of direct adverse impacts that would be restored under the SOPs are excluded from the calculation to figure net change in wetland acres.~~

Table 3-28
Summary of Adverse and Beneficial Wetland Impacts
Under the Daniel Replacement Project With Pipeline Alternative

Impact Type	Wet Meadow (acres)	Emergent Marsh (acres)	Riparian Woodland (acres)	Shrub Wetland (acres)
Lost wetlands - upper Strawberry River basin	0	0	2.1	0
Created wetlands - upper Strawberry River basin	0	3.4	0	2.6
Enhanced wetland quality and functions - upper Strawberry River basin	36.8	0	0	33.6

Page W 3-79, bottom portion of page, Table 3-29, Section 3.4.6.5.5, change to read:

~~Table 3-29~~
~~Summary of Adverse and Beneficial Wetland Impacts~~
~~Under the Daniel Replacement Project With Canal Alternative~~

~~Impact Type~~	~~Wet Meadow (acres)~~	~~Emergent Marsh (acres)~~	~~Riparian Woodland (acres)~~	~~Shrub Wetland (acres)~~	~~Total (acres)~~
~~Temporary direct adverse impacts along pipeline corridor restored under SOPs~~	5.8	~~0.3~~	~~0~~	~~.02~~	~~6.1~~
~~Indirect adverse impacts—Heber Valley and upper Strawberry River basin~~	~~0~~	~~0~~	~~2.1~~	~~0~~	~~-2.1~~
~~Wetlands created in upper Strawberry River basin~~	~~0~~	~~3.4~~	~~0~~	~~2.6~~	~~6.0~~
~~Enhanced wetland quality and functions—upper Strawberry River basin~~	~~36.8~~	~~0~~	~~0~~	~~33.6~~	~~+70.4~~
~~Net change in wetland acres*~~	~~+36.8~~	~~+3.4~~	~~-2.1~~	~~36.2~~	~~+74.3~~

~~Note:~~

~~*The 6.1 acres of direct adverse impacts that would be restored under the SOPs are excluded from the calculation to figure net change in wetland acres.~~

Table 3-29
Summary of Adverse and Beneficial Wetland Impacts
Under the Daniel Replacement Project With Canal Alternative

Impact Type	Wet Meadow (acres)	Emergent Marsh (acres)	Riparian Woodland (acres)	Shrub Wetland (acres)
Lost wetlands - upper Strawberry River basin	0	0	2.1	0
Created wetlands - upper Strawberry River basin	0	3.4	0	2.6
Enhanced wetland quality and functions - upper Strawberry River basin	36.8	0	0	33.6

Page W 3-85, left column, paragraph 4, Section 3.5.5.2, change to read:

Very little is known about the habitat preferences of the leatherside chub, however, the historic distribution of this species suggests a "cool" water preference. Based on collections by Woodward-Clyde Consultants (CUWCD 1993b) during Heber Valley field surveys they are usually found in areas characterized by cobble/gravel substrates, low to medium velocity, warm late-summer temperatures and some turbidity. It is unclear whether the chub prefer this type of habitat or are driven there by competition or predation by trout and other cold-water species. ~~compared to the "cold" water preference.~~

Page W 3-85, right column, paragraph 3, change to read:

3.5.5.3 Other Aquatic Resources

Other aquatic resources include benthic macroinvertebrates (aquatic insects, **crustaceans, annelids, and mollusks**) and amphibians (frogs, salamanders). No specific field surveys were conducted for either of these two groups except for the spotted frog, which is a Category-1 candidate threatened and endangered species (see Section 3.7, Threatened and Endangered Species). A Category-1 candidate is a species proposed for listing in the Federal Register under the ESA.

Page W 3-87, left column, paragraphs 4 & 5, Section 3.5.6.3.1.1, change to read:

The Aquatic Resource SOPs included in Chapter 1, Section 1.12.9.1 would minimize the potential for impact on cutthroat trout spawning areas in the upper Strawberry River basin. ~~There is potential for increased turbidity in streams associated with the abandonment and removal of DIC diversion facilities in the upper Strawberry River basin. Turbidity would increase noticeably as the DIC diversion facilities are removed and sediments become suspended in the water column. The increased turbidity has the potential to impact spawning areas of cutthroat trout (spring spawners) or kokanee (fall spawners) depending on the season of construction and the amount of flow in the stream.~~

~~Cutthroat trout spawning areas occur in the reaches of the upper Strawberry River tributaries where the DIC diversion facilities would be abandoned and removed. Abandonment and removal during the spring to early summer could cause sedimentation of cutthroat trout spawning gravels where eggs and/or fry are developing, which would result in a significant impact on game fish and their habitat.~~

Page W 3-87, right column, paragraph 3, Section 3.5.6.3.1.2, change to read:

However, the Utah Division of Wildlife Resources would continue to annually plant approximately 2,500 pounds of catchable rainbow trout in Daniels Creek reaches DC-05 and DC-06 to support a put-and-take trout fishery at a level comparable to baseline conditions. The biomass of fish stocked through this program is approximately 1,787 pounds more than the predicted decrease in trout biomass from lost natural production (2,500 pounds - 713 pounds = 1,787 pounds). ~~Management of this stream for a put-and-take fishery at levels comparable to baseline would compensate for the predicted losses in game fish standing crop and biomass from natural production. Therefore, there would be no significant impacts on game fish or their habitat in upper Daniels Creek.~~

The adverse impacts of the Proposed Action on naturally producing trout in upper Daniels Creek would be significant and would be mitigated under the Proposed Action. The Mitigation Commission will be a signator to the Conservation Agreement for Colorado River and Bonneville cutthroat trout. CUWCD will work with the Mitigation Commission as it participates in the conservation strategies to implement suitable mitigation for this impact, within the Provo River drainage if possible.

Page W 3-88, Table 3-33, Section 3.5.6.3.1.2, change to read:

SEE REVISED TABLE 3-33 ON NEXT PAGE

Page W 3-89, right column, paragraph 2, Section 3.5.6.3.1.2, change to read:

Positive fishery impacts would occur in additional streams in Heber Valley and the upper Strawberry River basin. In Heber Valley, streams connected to the Spring Creek system but not receiving target supplemental instream flows (such as upper Lake Creek) could have increased trout standing crop as fish move from the Spring Creek system into adjoining drainages. Such potential increases are difficult to quantify, however. **Improved flow conditions in the upper Strawberry River would indirectly benefit fish that are trapped in tributaries (e.g. Co-op Creek, Clyde Creek) that do not have barriers to passage under low-flow conditions.** I~~n the upper Strawberry River basin, Co-op Creek, Clyde Creek and other tributaries of the upper Strawberry River would benefit indirectly through improved aquatic habitat in the Strawberry River. Improved conditions in the Strawberry River could provide fish refuge during natural low-flow periods in the smaller tributaries.~~

Page W 3-90, left column, paragraph 2, Section 3.5.6.3.1.2, change to read:

Water releases from Jordanelle Reservoir to Heber Valley streams would reach equilibrium temperatures within about **3,280** ~~330~~ feet downstream of the dam, according to water quality modeling of releases from Jordanelle Reservoir under worst-case, summer-temperature conditions. Since the point of diversion to Heber Valley streams receiving target supplemental instream flows is about 9,500 feet below Jordanelle Reservoir, there would be no effect on water temperatures in the streams receiving target supplemental flows from the Provo River (see Section 3.3). There would be no significant temperature-related impacts on the Provo River since the predicted rise in temperature within the **3,280**~~330~~-foot zone below Jordanelle Reservoir is within the optimal range for trout.

Page W 3-90, right column, paragraph 4, Section 3.5.6.3.2.2, change to read:

Leatherside chub are found in a variety of habitat conditions within the impact area of influence that may not necessarily represent preferred conditions. It is unknown whether they have adapted to these conditions or are merely surviving in less than desirable conditions. ~~Leatherside chub also are relatively opportunistic species that could adapt to a variety of~~

Table 3-33
Summary of Changes in Predicted Trout Standing Crop and Biomass from Baseline Conditions Under the Proposed Action (WCWEP With Daniel Replacement Pipeline)

Stream / Reach	Predicted Trout Standing Crop			Trout Biomass			Percent Change from Baseline (%)
	Baseline (lb/acre)	Proposed Action (lb/acre)	Change from Baseline (lb/acre)	Baseline (pounds)	Proposed Action (pounds)	Change from Baseline (pounds)	
Spring Creek SP-01	64.85	247.26	182.41	84.31	321.44	237.13	281
Spring Creek SP-02	134.61	134.61	-0-	242.30	242.30	-0-	-0-
Spring Creek SP-03	70.23	262.94	192.71	91.30	341.82	250.52	275
Creamery Ditch SP-04	101.11	173.51	72.40	111.22	190.86	79.64	72
London Ditch SP-05	19.40	341.19	321.79	32.98	580.02	547.04	1,658
Rock Ditch RC-01	78.26	320.59	242.33	156.52	641.18	484.66	312
Lower Lake Creek LC-01	13.75	34.65	20.90	11.00	27.72	16.72	323
Daniels Creek[a] DC-05	45.37	8.52	-36.85	744.07	139.73	-604.34	-81
Daniels Creek[a] DC-06	40.71	1.78	-38.93	113.99	4.98	-109.01	-96
Upper Strawberry River[b,c]	n/a[d]	n/a	n/a	1,819	18,437	16,618	914
Totals	n/a	n/a	n/a	3,406.69	20,927.05	17,520.36	514

Notes:

[a] Annual planting of 2,500 pounds of catchable rainbow trout would continue in Daniels Creek to maintain a put-and-take fishery at baseline levels.

~~[a] Reduced trout standing crop and biomass in Daniels Creek would be compensated by annual planting of 2,500 pounds of catchable rainbow trout to maintain a put-and-take fishery at baseline levels.~~

[b] Upper Strawberry River includes the Strawberry River and its tributaries above Strawberry Reservoir (data from Mills 1984).

[c] Increased trout biomass in the upper Strawberry River basin as a result of terminating the DIC diversion is mitigation for impacts of the Strawberry Aqueduct and Collection System and is made possible by the Proposed Action (WCWEP With Daniel Replacement Pipeline).

[d] n/a = not applicable

~~habitat conditions that may not necessarily represent preferred conditions.~~ The predicted changes in habitat conditions in Heber Valley streams as a result of providing supplemental instream flows may produce habitat conditions less favorable to leatherside chub, but the change is not expected to result in significant adverse impacts on this species and some changes would benefit all species. For instance, providing year-round flows would benefit all aquatic resources, including leatherside chub, compared to baseline conditions where entire creeks or reaches of creeks go dry in the summertime.

Page W 3-91, left column, paragraph 7, change to read:

3.5.6.3.4 Impact Summary. Elimination of transbasin diversion flows in upper Daniels Creek would result in a decrease in the natural production of game fish (primarily brown and cutthroat trout, but also rainbow trout) in Daniels Creek reaches DC-05 and DC-06. **This impact would be significant.** Planting of hatchery-produced rainbow trout to **maintain** ~~support~~ a put-and-take fishery in upper Daniels Creek would **continue.** ~~compensate for the biomass of fish lost from the predicted decrease in natural production~~.

Page W 3-92, left column, paragraph 3, change to read:

3.5.6.4.1.2 Impacts During Operation. **This alternative would decrease trout standing crop and biomass in Daniels Canyon because reduced streamflows in upper Daniels Creek would cause adverse impacts on natural trout production in reaches DC-05 and DC-06. The trout standing crop and biomass would decrease by a predicted 81 percent compared to baseline conditions (Table 3-34). This adverse impact would be significant.** I~~mpacts on game-fish species in Daniels Creek and the upper Strawberry River basin under operation of this alternative would be the same as for the Proposed Action in Section 3.5.6.3.1.2. Overall, this alternative would result in a positive impact on game fish and their habitat from a predicted 467% increase in trout standing crop and biomass compared to baseline conditions (Table 3-34).~~

Page W 3-92, right column, paragraph 6 & 7, change to read:

3.5.6.4.4 Impact Summary. There would be a net decrease of about 713 pounds of trout in Daniels Canyon, which would be a negative impact on game fish and their habitat. ~~There would be a net increase of about 15,904 pounds of trout in the overall impact area of influence, which would be a positive impact on game fish and their habitat.~~

This alternative would decrease habitat for non-game species in upper Daniels Creek. These adverse impacts would not be significant. T~~his alternative would result in overall benefits to non-game fish species that co-occur with game fish, similar to the benefits for game-fish species. This would have a positive impact on non-game fish and their habitat.~~

Page W 3-93, Table 3-34, Section 3.5.6.4.1.2, change to read:

SEE REVISED TABLE 3-34 ON NEXT PAGE

Page W 3-95, left column, paragraph 1, Section 3.6.5, change to read:

Wildlife resources baseline conditions are the same as existing conditions. ~~The affected environment of wildlife resources is the same as baseline conditions.~~ The focus of this section is on the habitat of wildlife species, the places they occupy within the impact area of influence that may be affected by the Proposed Action and alternatives. These habitats include vegetated areas along streams and ditches (referred to as riparian zones), upland wooded areas and areas of sagebrush.

Table 3-34
Summary of Changes in Trout Standing Crop and Biomass from Baseline Conditions Under the DRP With Pipeline Alternative

	Trout Standing Crop			Trout Biomass			
Stream / Reach	**Baseline (lb/acre)**	**DRP With Pipeline (lb/acre)**	**Change from Baseline (lb/acre)**	**Baseline (pounds)**	**DRP With Pipeline (pounds)**	**Change from Baseline (pounds)**	**Percent Change from Baseline (%)**
Spring Creek SP-01	64.85	64.85	-0-	84.31	84.31	-0-	-0-
Spring Creek SP-02	134.61	134.61	-0-	242.30	242.30	-0-	-0-
Spring Creek SP-03	70.23	70.23	-0-	91.30	91.30	-0-	-0-
Creamery Ditch SP-04	101.11	101.11	-0-	111.22	111.22	-0-	-0-
London Ditch SP-05	19.40	19.40	-0-	32.98	32.98	-0-	-0-
Rock Ditch RC-01	78.26	78.26	-0-	156.52	156.52	-0-	-0-
Lower Lake Creek LC-01	13.75	13.75	-0-	11.00	11.00	-0-	-0-
Daniels Creek[a] DC-05	45.37	8.52	-36.85	744.07	139.73	-604.34	-81
Daniels Creek[a] DC-06	40.71	1.78	-38.93	113.99	4.98	-109.01	-96
Upper Strawberry River[b,c]	n/a[d]	n/a	n/a	1,819	18,437	16,618	914
Totals	n/a	n/a	n/a	3,406.69	19,311.34	15,904.65	467

Notes:

[a] Annual planting of 2,500 pounds of catchable rainbow trout would continue in Daniels Creek to maintain a put-and-take fishery at baseline levels.

~~[a] Reduced resident trout standing crop and biomass in Daniels Creek would be compensated by annual planting of 2,500 pounds of catchable rainbow trout to maintain a put-and-take fishery at baseline levels.~~

[b] Upper Strawberry River includes the Strawberry River and its tributaries above Strawberry Reservoir.

[c] Increased trout biomass in the upper Strawberry River basin as a result of terminating the DIC diversion is mitigation for impacts of the Strawberry Aqueduct and Collection System and is made possible by the DRP With Pipeline Alternative.

[d] n/a = not applicable

Page W 3-95, left column, paragraph 6, Section 3.6.5.1.2, change to read:

Upland game birds, including turkey, grouse, partridge and chukar, are found in steep, rocky upland habitats around the perimeter of the valley and similar areas of upper Daniels Canyon. Turkey, pheasant and quail are also likely to be found in Heber Valley. **The upland woodland habitat in the upper Strawberry River basin is important habitat for the sage grouse.** ~~They also frequent the upland woodland habitats in the upper Strawberry River basin, which is important habitat for the sage grouse.~~

Page W 3-97, left column, paragraph 4, Section 3.6.6.3.2, change to read:

~~• Potential loss of birds from electrocution on Proposed Action power lines~~

Page W 3-98, left column, paragraph 3, Section 3.6.6.3.2.2, change to read:

~~Some birds may be lost from electrocution if they strike or try and perch on the power lines installed under the Proposed Action.~~ **There would be a slight chance that birds may be lost from electrocution if they strike or perch on the power lines installed under the Proposed Action. Raptor-safe power poles, included under the SOPs for wildlife, would reduce or eliminate the chance of this impact.**

Page W 3-102, left column, paragraph 2, change to read:

3.7.5 Affected Environment (Baseline Conditions)

For most T&E species, baseline conditions were considered to be the same as existing conditions. However, for June sucker, baseline conditions in the lower Provo River equaled conditions under full operation of the Jordanelle **Reservoir**~~River~~.

Page W 3-102, bottom portion of page, Table 3-35, Section 3.7.5, change to read:

Table 3-35
Summary of T&E Species Known to Occur
in the WCWEP and DRP Impact Area of Influence

Species	Season of Occurrence	Sighting Information	Habitat Type	Habitat Quality
ENDANGERED SPECIES				
Peregrine falcon (*Falco peregrinus*)	Spring and fall migration	Infrequent sightings in upper Strawberry River basin	Emergent marsh, ponds, wet meadow for foraging	Optimal foraging habitat in some areas
June sucker (*Chasmistes liorus*)	May to July	Spawning in the lower 5 miles of the Provo River	Riverine	Declining
THREATENED SPECIES				
Bald eagle (*Haliaeetus leucocephalus*)	Fall migration, winter	Known to roost near the Provo River, Lake Creek, Center Creek and Strawberry River; infrequent migrants near Strawberry Reservoir	Riparian forest	Optimal roosting habitat along Provo River, Lake Creek, Center Creek, Strawberry River and Strawberry Reservoir
Ute ladies'-tresses (*Spiranthes diluvialis*)	Year-round	Two colonies have been identified south of Jordanelle Reservoir near the Provo River	Wetland and riparian habitats	Optimal in habitat along the northern portion of Provo River in Heber Valley and along Snake Creek; marginal to poor elsewhere
C-1 CANDIDATE SPECIES				
Spotted frog (*Rana pretiosa*)	Year-round	Populations near the Provo River between the Jordanelle and Deer Creek reservoirs	**Fragmented, includes** p~~P~~onds, wet meadow and emergent marsh	Optimal in **some** areas ~~currently inhabited~~; marginal to poor elsewhere

Page W 3-105, left column, paragraph 3, Section 3.7.5.5, change to read:

Most habitats where spotted frogs have been found are characterized by ponds with a variety of emergent vegetation such as cattail, sedge, watercress and muskgrass. The ponds are typically supported by springs, seeps, and backwater areas of streams such as those created by beaver activity. Wet meadows, open water ponds and emergent marshes provide suitable habitat in the impact area of influence. Presence of spotted frogs in the upper Strawberry River basin is unlikely because of ~~past rotenone treatments and~~ lack of historical sightings.

Page W 3-106, right column, paragraph 2, change to read:

3.7.6.3.5 Spotted Frog. Spotted frogs have not been documented in wet meadows that would be affected by the Proposed Action. **However, suitability of habitat has not been evaluated and recent surveys have not been conducted in the area that would be indirectly impacted by the 2-foot groundwater elevation drawdown. Impacts are not expected to occur because the potential impact areas are used for livestock grazing and hay production, which are uses not considered compatible with maintaining spotted frog habitat.** Therefore, the Proposed Action is **not expected to have a direct or indirect effect on spotted frogs or their habitat. However, the Fish & Wildlife Service, and Utah Division of Wildlife Resources feel there is a potential for indirect impact on spotted frog habitat.** ~~would have no direct or indirect impacts on spotted frogs or their habitat.~~

Page W 3-107, Table 3-36, Section 3.7.6.3.6, change to read:

SEE REVISED TABLE 3-36 ON NEXT TWO PAGES

Page W 3-110, Map 3-8, Section 3.7.6.4.5, change to read:

SEE REVISED MAP FOLLOWING REVISED TABLE 3-36.

Page W 3-111, right column, paragraph 3, Section 3.8.5, change to read:

This section defines the soil resources environment that would be affected by the Proposed Action and alternatives. **The soil resource baseline conditions are the same as existing conditions.** ~~The affected environment of the soil resources is the same as baseline conditions.~~

Page W 3-118, right column, paragraph 4, change to read:

3.10.5 Affected Environment (Baseline Conditions)

Baseline conditions used for the air quality analysis are the same as existing conditions. Although air quality data have not been collected in Heber Valley, the valley's air quality usually is excellent.

Page W 3-123, right column, paragraph 2, Section 3.11.6.2, change to read:

- What impacts would occur on agricultural production as more people move into Heber Valley, and how could this change the demand for water under the Proposed Action and alternatives?

  The Proposed Action and alternatives would not cause more people to move into Heber Valley (see the growth-inducing discussion in Section **3.12.6.3.10**~~3.12.7.3.9~~) The demand for irrigation water in Heber Valley is related to the types of crops grown and the amount of agricultural acreage. An increase in the valley's population, from causes other than the Proposed Action and alternatives, could change the overall demand for water. However, on a per acre basis, the total amount of water used by municipal and industrial uses approximates the total used by agriculture. **The State Engineer has advised CUWCD that the adjudication of a water right associated with conversion of agricultural to M&I water use in the Heber Valley would result in a M&I water right of approximately 3.0 acre-feet per acre, which would approximate the farm delivery requirement for the Proposed Action and DRP alternatives.**

Table 3-36
Summary of T&E Species Impacts

Page 1 of 2

Alternative	Type of Potential Impact	Peregrine falcon[1]	June sucker[1]	Bald eagle[1]	Ute ladies'-tresses[1]	Spotted frog
Proposed Action (WCWEP With Daniel Replacement Pipeline)	Taking	No	No	No	No	No
	Temporary increased stress, displacement, or reduced reproductive success	No	No	Yes	No	No
	Loss or degradation of habitat *before* conservation measures[2]	None	None	None	None	**Potential** ~~None~~
	Loss or degradation of habitat *after* conservation measures[3]	20.7 acres of wetland habitat	None	2.1 acres of riparian habitat	20.7 acres acres of wetland habitat	**Potential** ~~None~~
	Beneficial impacts	40.2 acres of wetland habitat	None	Restored streams in Heber Valley and upper Strawberry River basin	None	None
	Net change in habitat	Gain of 19.5 acres of wetland habitat	None	Loss of 2.1 acres of riparian habitat, beneficial effects of restored flows	Loss of 20.7 acres of marginal wetland habitat	None
Daniel Replacement Project With Pipeline	Taking	No	No	No	No	Yes
	Temporary increased stress, displacement, or reduced reproductive success	No	No	Yes	No	Yes
	Loss or degradation of habitat *before* conservation[2]	6.9 acres of wetland habitat	None	None	6.9 acres of wetland habitat	1.9 acres of wetland habitat
	Loss or degradation of habitat *after* conservation[3]	None	None	2.1 acres of riparian habitat	None	None
	Beneficial impacts	40.2 acres of wetland habitat	None	Restored streams in upper Strawberry River basin	None	None
	Net change in habitat	Gain of 40.2 acres of wetland habitat	None	Loss of 2.1 acres of riparian habitat, beneficial effects of restored flows	None	None

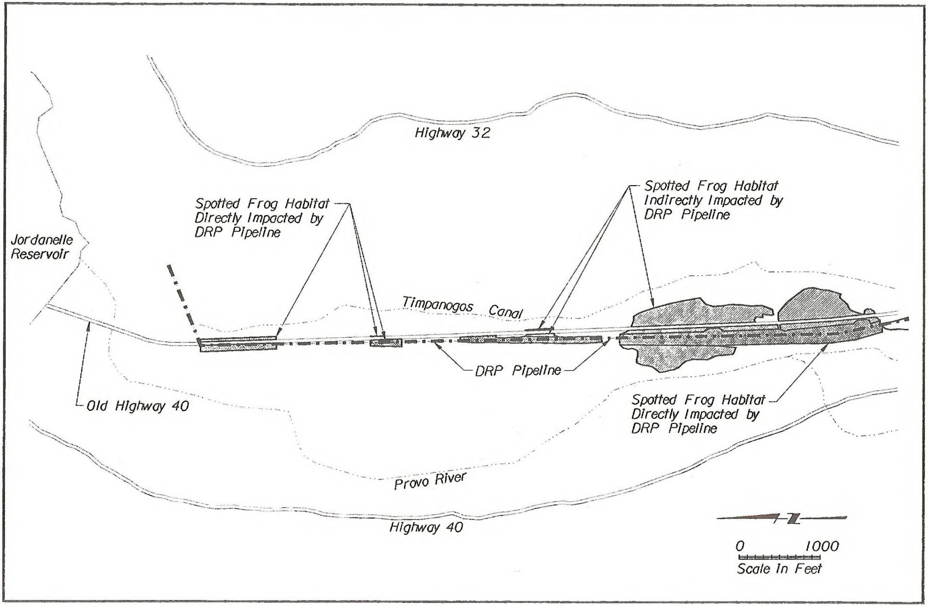
Table 3-36
Summary of T&E Species Impacts

Page 2 of 2

Alternative	Type of Potential Impact	Peregrine Falcon[1]	June Sucker[1]	Bald Eagle[1]	Ute Ladies'-tresses[1]	Spotted Frog
Daniel Replacement Project With Canal	Taking	No	No	No	No	Yes
	Temporary increased stress, displacement, or reduced reproductive success	No	No	Yes	No	Yes
	Loss or degradation of habitat *before* conservation[2]	6.9 acres of wetland habitat	None	None	6.9 acres of wetland habitat	1.9 acres of wetland habitat
	Loss or degradation of habitat *after* conservation[3]	None	None	2.1 acres	None	None
	Beneficial impacts	40.2 acres of wetland habitat	None	Restored streams in upper Strawberry River basin	None	None
	Net change in habitat	Gain of 40.2 acres of wetland habitat	None	Loss of 2.1 acres of riparian habitat, beneficial effects of restored flows	None	None

Notes:

[1] Impacts would be minimal and would not be considered to affect viability of the populations
[2] Impacts on habitat would be direct and temporary until conservation is fully implemented. All habitat loss would be offset by wetland standard operating procedures
[3] Impacts would be indirect and long-term, occurring after the Proposed Action or alternatives are fully implemented


Highway 32
Spotted Frog Habitat Indirectly Impacted by DRP Pipeline
Spotted Frog Habitat Directly Impacted by DRP Pipeline
Jordanelle Reservoir
Timpanogos Canal
DRP Pipeline
Old Highway 40
Spotted Frog Habitat Directly Impacted by DRP Pipeline
Provo River
Highway 40
N
0
1000
Scale in Feet

Map 3–8
Areas of Potential Impact on Spotted Frog Under the DRP With Pipeline and the DRP With Canal Alternatives

Page W 3-135, right column, after paragraph 1, Section 3.12.6.2, add paragraph to read:

- **Would the Proposed Action and alternatives impact minority and low-income populations?**

  Based on a review of the demographic data collected for Wasatch County, minority and low-income populations are for the most part not present in Heber Valley and therefore would likely not be impacted. Demographic data collected for Wasatch County include: U.S. Bureau of the Census 1983a, 1983b, 1994a, and 1994b; Bureau of Economic and Business Research, University of Utah 1993a and 1995; U.S. Bureau of Economic Analysis 1994; and Utah Office of Planning and Budget 1992 and 1994.

Page W 3-141, right column, paragraph 2, change to read:

3.12.6.3.8 Employment Impacts. About 83 temporary jobs would be created during construction of the Proposed Action. During operation, one full-time O&M laborer and three part-time O&M staff would be employed by WCSSA (see Table 1-18 in Section 1.12.3 of Chapter 1). **Employment in the farm service component of the farm sector** ~~Farm employment~~ is expected to increase by approximately six jobs — a 1.4 percent increase in baseline farm **sector** employment — because sprinkler systems require more labor to maintain than flood irrigation.

Page W 3-152, left column, paragraph 6, change to read:

3.14.5 Affected Environment (Baseline Conditions)

Baseline conditions used for the noise analysis are the same as existing conditions. Noise is measured using the A-weighted decibel scale (dBA). Values on this scale represent the loudness of common sounds perceived by humans.

Page W 3-157, right column, paragraph 7, change to read:

3.15.6.4.3 Impact Summary. A total of 95.3 acres in Heber Valley would be temporarily disturbed during construction of the DRP With Pipeline Alternative, causing short-term adverse visual impacts. About 0.3 acres would be changed from existing agricultural and natural landscape to pumping stations. A total of 0.7 mile of above-ground powerline with **30**~~3~~-foot poles would be extended to supply power for pump stations. These minor visual changes are not considered significant because they are not out of character with the existing landscape or of major concern to viewers.

Page W 3-159, left column, paragraph 4, change to read:

3.16.4 Description of Impact Area of Influence

The recreation impact area of influence includes the streams in the Heber Valley that would receive supplemental instream flow under the Proposed Action (i.e., Spring Creek, Rock Ditch, lower Lake Creek, London Ditch and Creamery Ditch), Daniels Creek and ~~existing and proposed recreation areas in and around Heber Valley. These areas include Wasatch Mountain State Park and recreation facilities at Jordanelle and Deer Creek reservoirs. The recreation impact area of influence also includes~~ the upper Strawberry River basin.

Page W 3-160, right column, paragraph 1, Section 3.16.6.3.1, change to read:

Eliminating upper Strawberry River basin flows from Daniels Creek would not change recreation use because the Utah Division of Wildlife Resources would continue to stock about 7,500 fish **per year (same as baseline levels)** ~~over the summer months~~, which would support about 1,330 angler days per year. **The stocking may have to occur earlier in the season during dry years.**

Page W 3-161, left column, paragraph 2, Section 3.16.6.3.4, change to read:

Trespassing ~~Trepassing~~ by anglers on private lands could occur.

Page W 3-161, right column, insert new Section 3.16.6.6 to read:

3.16.6.6 No Action Alternative

The baseline recreation conditions described in Section 3.16.5 would continue under the No Action Alternative.

Page W 3-162, right column, paragraph 1, change to read:

3.17.5 Affected Environment (Baseline Conditions)

Baseline conditions are the same as existing conditions. No prehistoric sites or paleontological localities have been recorded within the impact area of influence.

Page W 3-171, left column, paragraph 4, Section 3.19.3, change to read:

~~The predicted loss of naturally reproducing cutthroat trout in upper Daniels Creek as a result of termination of the DIC diversion is unmitigable. Supplemental instream flows in this portion of upper Daniels Creek would be required to mitigate for this impact and there is no source of water for such flows.~~ **The adverse impacts of the Proposed Action on naturally producing trout in upper Daniels Creek would be significant but would not be mitigated under the Proposed Action. Mitigation for impacts on the naturally reproducing trout in upper Daniels Creek would be required under the Proposed Action, DRP With Pipeline and DRP With Canal alternatives. Since the impacts cannot be mitigated within the impact area of influence, the Mitigation Commission will work in its role as a signatory party to the Conservation Agreements for Colorado River and Bonneville cutthroat trout to implement suitable mitigation for this impact, within the Provo River drainage if possible.**

Page W 3-171, right column, paragraph 2, Section 3.19.4, change to read:

The final project plan and design would avoid and minimize impacts on the spotted frog to the maximum extent possible. Proposed wetland restoration under the SOPs (see Chapter 1, Section 1.12.9) is expected to fully replace spotted frog habitat that would be impacted by construction of the DRP alternatives. Additional measures would be developed if wetland restoration did not meet habitat needs. A detailed, long-term monitoring plan also would be designed and implemented in conjunction with wetland mitigation. The plan would include measures to determine the success of habitat recovery after disturbance, re-population of the restored area and relocation efforts. Also, barriers would be placed around the construction site to prevent spotted frogs from entering, and measures would be designed for relocating frogs that are discovered in the area during construction. Orange fencing would be installed to prevent construction equipment from unnecessarily entering occupied habitat. **Occupied areas near construction zones would be posted with signs stating "Conservation Area - Do not disturb."**

All potential mitigation measures would be finalized with the FWS and Utah Division of Wildlife Resources.

Page W 3-171, right column, paragraph 3, Section 3.19.4, change to read:

Spotted frog habitat in emergent marsh, open water and wet meadow areas **within the area of impact** ~~of northern Heber Valley~~ would be inventoried to more accurately identify occupied areas before construction. Surveys for egg masses would be conducted in early April during the year construction is scheduled. Results of these surveys and records of known spotted frog locations would be used to guide appropriate conservation measures.

Page W 3-171, right column, paragraph 4, Section 3.19.4, change to read:

Impacts on spotted frogs could be minimized by restricting construction activities **during certain periods** in areas that are known to be occupied by spotted frogs.

Page W 3-172, left column, paragraph 1, Section 3.19.4, change to read:

Direct effects on spotted frogs would be minimized by conducting rescue and relocation of adult frogs prior to starting construction and constructing a barrier or fence between the construction corridor and adjacent undisturbed habitat. Spring surveys would be conducted to determine if egg masses are present or absent. **A protocol would be developed to guide these efforts in cooperation with FWS, DWR and the conditions and objectives of a Spotted Frog Conservation Agreement when it is prepared and approved for implementation.** Adult frogs would be collected from the immediate area and transferred to the adjacent habitat during the late summer and fall months. The construction area would be fenced with silt fencing high enough to prevent re-entry of frogs during construction. The silt fencing would remain in place until the habitat is restored. After construction and restoration are complete, the barrier would be removed to allow frogs to return to the site. Rescue and relocation of frogs would minimize effects on the population. It is important to note that the success of frog relocation would be uncertain since monitoring has rarely been implemented to determine success of past relocation efforts. Some evidence suggests that ranid frogs imprint on their neonatal habitat and may attempt to return to hatching areas. Sites designated to receive relocated frogs would be selected with input from the FWS and Utah Division of Wildlife Resources. **Habitat conditions of spotted frogs would be enhanced where necessary.**

Page W 3-172, left column, paragraph 2, Section 3.19.4, change to read:

A detailed, long-term monitoring plan **would** ~~should~~ be designed and implemented **in accord with the Spotted Frog Conservation Agreement conditions and objectives when it is prepared and approved for implementation** to determine the success of habitat recovery after disturbance, re-population of the restored area and relocation efforts. **If monitoring results show a need for additional measures to avoid losses of spotted frogs or their habitat, feasible actions would be immediately implemented.** Other measures **would** ~~should~~ be implemented such as placing barriers around the construction site to prevent spotted frogs from entering the area and designing measures for relocating frogs that are discovered within the area during construction.

Page W 3-172, right column, paragraph 6, Section 3.20.1, change to read:

The following resources would have no unavoidable adverse impacts under the Proposed Action and DRP alternatives:

- ~~Wetlands~~

- Wildlife resources
- Recreation resources

Page W 3-173, left column, paragraph 3, change to read:

3.20.3 Water Quality

Minor increases in groundwater NO_3 concentrations would occur during wet hydrologic conditions. Deer Creek Reservoir would experience minor increases in TSS loads during average and dry hydrologic conditions.

3.20.4A Wetlands

About 20.7 acres of low function and value wet meadow wetlands would be lost in Heber Valley under the Proposed Action. This adverse impact would result from predicted groundwater elevation drawdown caused by converting flood to sprinkler irrigation.

3.20.4B Aquatic Resources

Page W 3-174, right column, paragraph 2, Section 3.21.2.1, change to read:

- ~~The availability of water supplies has increased from the Weber, Duschene and Strawberry River transbasin diversions, and will soon increase again once Jordanelle Reservoir is in full operation~~

Page W 3-176, left column, paragraph 1, Section 3.21.2.3, change to read:

Future interrelated projects are expected to mitigate all or most of the adverse wetlands impacts they cause. The WCWEP and DRP Proposed Action (WCWEP With Daniel Replacement Pipeline) and PRRP Proposed Action (Riverine Habitat Restoration) would cause an overall net gain of approximately **197.6** ~~264.9~~ acres of wetlands. Some wet meadow wetlands that are not protected by the COE (referred to as "non-jurisdictional" wetlands) or the Wasatch County Planning Department may be directly or indirectly impacted in Heber Valley by future development projects without being mitigated.

Page W 3-177, left column, paragraph 2, Section 3.21.2.6, change to read:

The following subsections describe future cumulative impacts that could be caused by the WCWEP and DRP Proposed Action (WCWEP With Daniel Replacement Pipeline) and interrelated projects. **The June sucker is not included in the following discussion because the WCWEP and DRP Proposed Action (WCWEP With Daniel Replacement Pipeline) or PRRP Proposed Action (Riverine Habitat Restoration) would not affect this species. The cumulative impact on June sucker from the Provo River Project and the CUP Bonneville Unit is and will be addressed in the Provo River Project and SFN Biological Opinions.** ~~The June sucker and spotted frog are not included in the following discussion because the WCWEP and DRP Proposed Action (WCWEP With Daniel Replacement Pipeline) would not cause impacts on these species or their habitat.~~

Page W 3-178, left column, after paragraph 4, add paragraph to read:

3.21.2.6.4 Spotted Frog. The WCWEP and DRP Proposed Action (WCWEP With Daniel Replacement Pipeline) and interrelated projects would have negative and beneficial impacts on spotted frog habitat. About 22.2 acres of such habitat would be temporarily disturbed during construction of the PRRP Proposed Action (Riverine Habitat Restoration), and this same project would permanently remove approximately 55.2 acres. The PRRP Proposed

Action (Riverine Habitat Restoration) would create about 90.0 acres of habitat, thus resulting a net gain of 35.7 acres.

Page W 3-180, left column, paragraph 4, Section 3.21.2.11, change to read:

The Heber Valley portion of the Tri-Valley Watershed Plan would help increase productivity of agricultural resources in Heber Valley, however the impacts of the Tri-Valley Watershed Plan on agricultural economics are not **available**~~readily quantifiable~~. Future urban development in Heber Valley will continue to take agricultural land out of production but would benefit other sectors of the economy. Such development also would continue to change social conditions in Wasatch County and raise property tax revenue for the County.

4.4 Chapter 4 - Consultation and Coordination

Page W 4-5, right column, paragraph 3, change to read:

4.3.1.10 Upper Strawberry River Basin Consultation. CUWCD held consultation meetings with the USFS Heber Ranger District on the plan to abandon and remove Daniel Irrigation Company diversion facilities in the upper Strawberry River basin. The first meeting was held on August 10, 1994 to review the alternatives assessed by the USFS and discuss data analyses for recreation, cultural and aquatic resources. **The Forest Service conducted an advertised public scoping meeting on May 5, 1994 at the Heber Ranger District. This public scoping meeting was attended by representatives of CUWCD, Stonefly Society, Wasatch SCD, and WCSSA.** Additional consultation meetings were held with the USFS on October 3, 1994; October 18, 1994; November 15, 1994; February 8, 1995; and March 13, 1995. **The Forest Service also conducted a field meeting and consultation on October 10, 1995 with the CUWCD, FWS, USBR, Wasatch County Commissioners, Wasatch County Water Board, Daniel Irrigation Company, Utah Division of Wildlife Resources, and local livestock grazing permittees.** During these meetings, modifications to the plan were discussed and the environmental analyses were reviewed. The following USFS representatives participated in the consultation meetings:

- Dave Christensen
- Barbara Franano
- Julie Jensen
- Bevan Killpack
- Deanna Nelson
- Jim Percy
- Charmaine Thompson
- Brett Wiese

4.5 References Cited

Page R-3, change to read:

Hill, M. T., W. S. Platts, and R. L. Beschta. 1986. Ecological and geomorphological concepts for instream and out-of-channel flow requirements. *Rivers* 2(3):198-210.

Holden, P.B., W. Masslich, and P. Abate. 1994. Technical report for threatened, endangered, and candidate fish species for the I&D System EIS. BIO/WEST, Inc. Logan, Utah.

Holden, P. B., D. Olsen, and P. Bate. 1995. Flushing flow, habitat, and vegetation studies of the lower Provo River, 1995. PR-514-1. Logan, Utah: BIO/WEST, Inc.

Page R-8, change to read:

__________. 1986. *Recovery plan for the Pacific bald eagle.* U.S. Fish and Wildlife Service. Portland, Oregon

__________. 1988. Aquatic Mitigation Plan for Strawberry Aqueduct and Collection System. Interagency Aquatic Biological Assessment Team, U.S. Fish and Wildlife Service. Salt Lake City, Utah.

__________. 1992b. Interim survey requirements for *Spiranthes diluvialis*. Letter from the U.S. Fish and Wildlife Service. November 23, 1992.

Page R-9, change to read:

Utah Division of Water Resources. 1993. *Water related land use inventory (Utah Lake study area).*

Utah Division of Wildlife Resources. 1995. *Species of special concern summary.* Utah Natural Heritage Program. Salt Lake City, Utah. 12 p.

Utah Foundation. 1994. *Statistical review of government in Utah.*

4.6 Appendix A — Noxious Weed Control Plan

Page A-1, after paragraph 7, add to read:

A.2.2 Scotch Thistle *(Onopordum acanthium)*

Scotch thistle is an drought-tolerant, aggressive, biennial weed that grows up to 8 feet tall. Distinctive characteristics include: stems with broad spiny wings; large spiny, grayish-colored leaves covered with fine, dense hair and numerous flower heads with one to 2-inch diameter violet to reddish flowers. The basal leaves may grow up to 2 feet long and one foot wide.

This plant has spread into sagebrush, riparian, aspen and other native plant communities where it competes successfully with indigenous plant species. It is especially well adapted to livestock bed-ground and trail sites.

Control of noxious thistle species is especially important in critical habitat areas to avoid competition with Ute ladies'-tresses because thistles form thick monocultures that can out-compete the orchid.

A.2.3 Musk Thistle *(Carduus nutans)*

Musk thistle is an aggressive coarse biennial or sometimes a winter annual herb that grows up to 6 feet tall. Identifying characteristics include: tap-root, deeply-lobed, dark green leaves with light green midrib and spiny margins; disc flowers are deep rose, violet or purple, sometimes white. Musk thistle is a common invader of pastures, range and forest lands, waste areas, ditch banks, stream banks, and grain fields. Musk thistle can be chemically controlled, but requires persistent spraying. Since the plants reproduce only through seeds produced every other year, the best control method is to cut the young plants off below the ground level. Scotch thistle is known to occur on the Walker property and the Condie properties (Jones 1995; Young 1995).

Control of noxious thistle species is especially important in critical habitat areas to avoid competition with Ute ladies'-tresses because thistles form thick monocultures that can out-compete the orchid.

A.2.4 Yellow Starthistle *(Centaurea solstitialis)*

Yellow starthistle is an aggressive annual or biennial growing 2 to 3 feet in height. Distinguishing characteristics include: deeply lobed white basal leaves, sharp, entire upper leaves; slender rigid stems covered with cottony youth; yellow flowers appear in mid-summer and sharp yellow spines up to 3/4-inch long extend from the seed case immediately beneath the flower.

Starthistle has been identified in the northern reaches of the Provo River corridor below Jordanelle Dam (Young 1995). It can be poisonous to horses.

Control of noxious thistle species is especially important in critical habitat areas to avoid competition with Ute ladies'-tresses because thistles form thick monocultures that can out-compete the orchid.

Page A-4, paragraph 6, change to read:

A.3.4 Mechanical or Hand Control

Mechanical or hand control of noxious weeds identified in areas disturbed by construction activities would be used as an alternative to herbicide application. Mechanical control would involve using construction equipment such as a bulldozer or loader to scrape the soil surface and collect the weeds prior to development of seeds. Hand control of weeds would involve digging or pulling up weeds using hand tools prior to development of seeds. **Noxious weeds would be controlled by hand removal in areas of sensitive habitats such as those occupied by Ute-ladies'-tresses or spotted frog.** Collected weeds would be burned or properly disposed to prevent spreading onto other disturbed areas.

Appendix 1
Environmental Commitments List

Appendix 1
Environmental Commitments List

This appendix defines Environmental Commitments that would be followed during the construction, operation and maintenance of the Proposed Action and DRP alternatives. The purpose of the Environmental Commitments is to avoid and minimize adverse environmental impacts. Most of the Environmental Commitments in this appendix were Standard Operating Procedures (SOPs) in Section 1.12.9 of the Draft EIS, starting on page W 1-69. Bold print has been used in the text below to indicate changes that were made to the SOPs from the Draft EIS. These changes have been made to respond to comments received on the Draft EIS.

Agricultural

- Farm and ranch owners who may be affected by project construction will be notified of construction procedures and schedules to prevent conflicts with agricultural operations. Procedures to avoid conflicts with agricultural operations will be followed during construction to the maximum extent possible. Unavoidable damage to facilities would be replaced or restored during project construction. Farmers and/or landowners who experience additional unavoidable impacts on agricultural facilities and operations would be compensated for their direct cost of moving or reconstructing facilities. The value of agricultural production on lands acquired would be addressed during the land **appraisal** process that would be used to determine the fair market value of the land.

Air Quality

- CUWCD will follow, **to the extent possible**, the EPA's recommendations for aggregate storage pile emissions (AP-42, Section 11.2.3) to minimize dust generated by the project. This will consist primarily of periodic watering of equipment staging areas and dirt roads used during construction.

- Construction machinery will be routinely maintained to ensure that engines remain tuned and emission-control equipment is properly functioning as required by law.

- Operation and maintenance vehicles will be routinely maintained to ensure that engines remain tuned and emission-control equipment is properly functioning as required by law.

Aquatic Resources

- To the extent **possible**, heavy equipment use in stream beds and riparian areas during construction at stream crossings **would be minimized.**

- **Construction in Heber Valley streams where brown trout spawning or egg incubation occurs (October to March) would be minimized.**

- **Construction in upper Strawberry Valley streams would be minimized during mid-May through mid-July when cutthroat trout spawning and egg incubation could be impacted.**

- **The CUWCD will support studies to determine if there are significant losses of fish into any canal associated with the WCWEP & DRP and develop measures to prevent such losses as may warrant alleviation in coordination with FWS and the Utah Division of Wildlife Resources.**

- **The Mitigation Commission will be signatory to the Conservation Agreements for Colorado River and Bonneville cutthroat trout and as such will work to implement suitable mitigation**

for the impact on naturally reproducing cutthroat trout in upper Daniels Creek, within the Provo River drainage if possible.

- **A survey will be conducted prior to construction activities to identify leatherside chub population centers and learn more about the status of the species.**
- **Areas outside the impact area but within Heber Valley that contain populations of leatherside chub that would benefit from habitat enhancement would be enhanced and protected in accordance with an agreement to be finalized with the FWS and Utah Division of Wildlife Resources.**
- **The CUWCD will enter into an agreement with the Natural Resources Conservation Service and Wasatch Soil Conservation District for the purpose of assuring that unavoidable significant losses to fish and wildlife caused by the Tri-Valley Watershed Project will be compensated for by the Tri-Valley Watershed Project. The Agreement will be in place prior to the CUWCD awarding any construction contracts for WCWEP distribution pipelines.**
- **The draft Conservation Agreement for spotted frog and the draft Conservation Plan for leatherside chub have not been completed. CUWCD understands that these agreements are in the process of being prepared. CUWCD will review these documents when they are available and consider them in the implementation of the Proposed Action or DRP alternatives.**

Impacts on aquatic resources also can be avoided and minimized by the following types of **Environmental Commitments:** health and safety, revegetation and erosion control, and wetlands.

Cultural Resources

- A Class III survey will be conducted for the selected project areas after the EIS process and before construction. This will be conducted by cultural resource experts in areas that would be directly impacted by construction. Data will be recovered and mitigation procedures used when adverse impacts are unavoidable.

Energy Conservation

- Standard energy conservation measures will be used during construction, operation and maintenance, e.g., avoiding unnecessary idling, and keeping vehicles and equipment tuned and maintained.
- The shortest possible transportation routes that are environmentally acceptable and safe will be used during construction to conserve fuel.

Health and Safety

- The Utah Occupational Safety and Health Act and the conditions of the federal Occupational Safety and Health Standards will be followed during construction, operation and maintenance. Copies of these publications and the health and safety **Environmental Commitments** will be provided to project workers at construction sites.
- Warning signs and temporary barriers will be provided in areas used by pedestrians, bicyclists or other recreationists where construction activities are underway.
- The 1995 pre-design Cross Drainage Study will identify the storm runoff potential of local streams and basins for 25- and 100-year flood events. This study will identify both the peak and duration of flows that could occur where project facilities will be located. Appropriate modifications will be made to project design, operational procedures and emergency response plans to minimize flood hazards.

- Automated monitoring systems will be installed during construction to allow monitoring of conveyance flows during operation. This system will allow operators to reduce conveyance flows or releases into stream channels during periods of potential flooding.

- **A Spill Prevention and Countermeasure Control Plan (SPCCP) will be developed to contain inadvertent spills of petroleum or other toxic substances.**

  In the event of inadvertent spills of toxic substances the following agencies shall be promptly notified: National Response Center (800-424-8802) and the Utah Environmental Response and Remedial Division (801-536-4100)

- **Hazardous materials such as explosives, solvents, gasoline, diesel and lubricants shall be stored in safe areas away from sensitive plant communities and fish and wildlife habitats.**

- Water will be conveyed only during the winter in open canals that are used to maintain instream flows. All other canals would be dewatered when icing could be a safety hazard. Open canals would be temporarily shut down during winter for short periods when icing is a safety hazard.

- Appropriate fencing and signs will be erected along canals used by the project to deter the public from hazardous areas adjacent to existing and planned residential areas.

- Onsite and offsite construction activities, and operation and maintenance activities, will fully conform with the standards in the USBR safety and health standards manual (USBR 1993). These standards include the following items:

- Good housekeeping practices for routine scrap removal from work sites

- Proper handling, storage, use and disposal of toxic materials

- Prohibiting use of alcohol, drugs and firearms

- Restricting public access to work areas to the extent possible

- Providing onsite training to employees exposed to hazards associated with work assignments

- Weekly safety meetings conducted by supervisors for employees under their supervision

- Providing adequate first-aid supplies, trained personnel and emergency evacuation procedures

- Dissemination of information on the hazards of chemicals used, stored or produced in workplaces to employees, contractors, visitors and the public who could potentially be exposed

- Mandatory use of appropriate protective work clothing

- Use of a uniform standard signal system in the operation of cranes, derricks and hoists

- Use of dependable, trained and qualified signal and flag persons wearing high-visibility apparel for traffic control

- Adherence to a detailed fire protection plan (e.g. fuel storage and refueling facilities)

- Proper storage of materials used in construction

- Operation of equipment only by employees qualified to operate the type of equipment assigned

- Providing necessary barricades, walkways, lighting, a public awareness program, and posting for public protection before the start of excavation operations

Land Use

- Existing land uses can continue in the ROWs of buried pipelines after construction. The only exceptions to this are existing structures that can not be rebuilt in the ROWs. If structures need to be displaced, the land owners will be compensated at fair market value. No occupied buildings will be displaced by the project.

Noise

- The location of schools, churches, nursing homes, residential areas and other "sensitive receptors" will be considered when scheduling construction activities with significant noise levels, and in siting temporary and stationary, post-project noise-emission sources.

- Mufflers on construction equipment will be checked regularly to minimize noise.

- CUWCD will follow the noise exposure and hearing conservation standards and practices contained in the USBR manual (USBR 1993) to protect potentially exposed project workers and the public from harmful noise levels.

Noxious Weed Program

Revegetated areas will be monitored for invasion of noxious weeds and other weed species, as required by Section 4.17.3 of the Utah Noxious Weed Act, and appropriate weed control measures implemented. The noxious weed program will include the following measures:

- Establishing a cover of desirable **and preferably indigenous** plant species as quickly as possible after construction

- Interim seeding **and weed control** of topsoil stockpiles if they would remain barren for **extended periods of time**

- Conducting weed surveys during the fall and spring after initial seedings

- Applying pesticides, removing the weeds by hand **or using mechanical or biological control methods** before they develop seeds or spread roots

- Applying pesticides will be applied in accordance with federal and state application, **permit** and record keeping requirements. **Key considerations will include compatibility with wildlife management plans, protecting indigenous plant communities and avoiding environmental contamination.**

- **Noxious weed removal in the vicinity of Ute ladies'-tresses will be done in a manner that avoids or minimizes impacts on these species or their habitats**

- **Weeds removed by mechanical or hand control methods shall be burned or otherwise properly disposed of to prevent their spread to other areas**

- Monitoring for revegetation success will be conducted for a period of one year for agricultural lands and 3 years for undeveloped lands following completion of initial revegetation. **Monitoring will be conducted for a longer period if anticipated results are not achieved and the project is contributing to the spread of noxious weeds.**

A program to make contractors and others in field positions aware of undesirable vegetation shall be implemented.

Appendix A in the Draft EIS provides the details of the noxious weed control program.

Revegetation and Erosion Control

Revegetation and erosion control procedures would be implemented where construction of the WCWEP or DRP would disturb soil. These areas are expected to be along new pipeline routes and portions of canals that would be enlarged or rehabilitated. The procedures would be designed to restore vegetation that requires little maintenance and to avoid erosion and sedimentation problems.

The contractor would be required to restore disturbed surfaces to pre-construction conditions and avoid and minimize erosion. Rehabilitation of existing canals along most portions of the Wasatch and Timpanogos canals would be conducted from inside the canal to minimize disturbance. The Humbug Canal and Timpanogos Canal would be re-excavated or reshaped in the flat, farmed areas of Heber Valley, and their embankments reseeded after construction.

The following describes additional revegetation and erosion control procedures:

- **The top one foot of** existing topsoil **(or less if the existing topsoil layer is less than one foot** deep) will be carefully removed and stored during trenching operations and replaced **to a depth of six inches or to a depth that is available** after trenches are backfilled. Additional topsoil **of suitable quality** will be added **from areas that are not important fish and wildlife habitat** if needed to allow vegetation growth.
- Disturbed areas will be reclaimed **and the goal is to restore the land** to pre-existing conditions as soon as possible after construction. The contractor will be required to match the natural vegetation or crop cover of adjacent land. Landowners will be paid during the right-of-way (ROW) acquisition process for the cost of reseeding, planting or resodding landscaped areas that are disturbed.
- Areas used for small grains or row crops will be ripped and left bare for the landowner to cultivate and plant at the same time as adjacent farmland.
- In areas subject to erosion, an erosion control blanket or matting will be placed on slopes for stabilization, to prevent wind and water erosion and help establish vegetation. A site analysis will be conducted to determine the appropriate type of mulch and other erosion control material for each area.
- The criteria for selecting species to plant in disturbed areas will include hardiness, compatibility with wildlife, capacity to self-perpetuate and rooting characteristics that help stabilize the soil. **Other considerations will include the ability of species to be consistent with the composition of contiguous indigenous plant communities and to compete with undesirable vegetation. The NRCS, FWS and Utah Division of Wildlife Resources will be consulted with to help finalize the selection of species.**
- To maximize the success of revegetation, planting will occur during appropriate climatic periods in properly prepared soil. Planting, watering and fertilizer application techniques will be chosen for specific conditions at each site and the needs of selected plant species.
- Revegetation and erosion control areas will be monitored and repairs made if necessary.
- Temporary fencing would be erected in areas where livestock or wildlife will likely interfere with successful revegetation and erosion control.

- Landowners will be compensated during the ROW acquisition if any valuable ornamental trees or shrubs need to be removed or disturbed.

Threatened, Endangered and Candidate Species

- **All new power lines constructed under the Proposed Action and DRP alternatives shall be designed to minimize the risk of raptor electrocution and would be consistent with designs contained in the following publication: "Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 1981", Raptor Research Report No. 4 by the Raptor Research Foundation at the Carpenter St. Croix Nature Center in Hastings, Minnesota.**

The wetlands, aquatic resources, wildlife and other Environmental Commitments would help avoid and minimize impacts on threatened, endangered and candidate species.

Transportation

- Staging areas for construction material and equipment will be sited to minimize or avoid traffic impacts in residential, commercial, and recreation access areas.

- Traffic control and other safety measures in construction and maintenance areas will be followed to minimize the risks of accidents to vehicles and pedestrians during construction and maintenance of the project.

- Impacts in areas with significant traffic levels, such as critical intersections and primary arterials, will be minimized or avoided to the extent feasible by scheduling equipment transport and material deliveries during off-peak hours. Off-peak hours are those times during any given work day which have traffic volumes less than the highest Annual Average Daily Traffic.

- Roads damaged by project construction activities will be restored to at least the level that existed prior to construction.

- The shortest possible transportation routes will be used to dispose of spoil and waste.

- Construction and traffic control procedures will be designed to allow continued access to businesses and residences.

- Construction and traffic control procedures will be designed to minimize the length of detours.

- Project personnel will control traffic in affected areas.

Visual Resources

The following are visual resources **Environmental Commitments.** The revegetation **Environmental Commitments** also would help minimize visual impacts.

- Disturbed areas will be landscaped to match existing and characteristic land forms. When feasible, disturbed areas will be recontoured and slopes rounded along maintenance roads, canals, pipeline alignments, and river banks to blend with surrounding natural contours.

- New plantings will be blended with natural vegetation at the edges, and will be configured to match existing vegetation patterns and provide horizontal and vertical diversity.

- Power poles and other facilities would be located to minimize visual impacts on nearby residents.

Water Quality

The hazardous materials procedures included under the health and safety and erosion control **Environmental Commitments** would help avoid and minimize adverse water quality impacts.

Wetlands

- Direct and indirect impacts on wetlands will be avoided, unless there are no other practical (as defined in 40 CFR 230.3 meaning capable of being done, after taking into consideration cost, existing technology and logistics in light of overall project purposes) alternatives. Procedures to avoid impacts will include protection of wetlands with silt fencing during construction and avoiding quantity and quality impacts on surface water and groundwater resources that serve as a source of water for wetlands.
- Where impacts on wetlands cannot be avoided, impacts will be minimized to the extent possible and mitigation approaches will be reviewed with the U.S. Army Corps of Engineers, **FWS, and Utah Division of Wildlife Resources.**
- Heavy equipment in wetland areas will be placed on geotextile mats or other measures will be taken to minimize soil disturbance.
- Construction barriers will be installed to prevent unnecessary construction damage to adjacent wetlands.
- Materials excavated from the pipeline trench will be placed on the adjacent roadway or in other upland areas. No excavated material will be placed in any wetland.
- Wetland soils will be removed, segregated and stockpiled in upland areas. The wetland topsoil will be replaced in the top 6 to 12 inches of the pipeline trench.
- After the wetland topsoil is replaced, the disturbed area will be graded to match previous contour elevations **and to blend with adjacent lands.**
- The disturbed wetland areas will be revegetated with a mixture of desirable wetland plant species.
- **Measures** will be implemented **during** the installation of pipelines **and trenches** to prevent draining wetlands, e.g., using **impervious** cutoff walls.
- **Where pipelines must transect wetlands, fabric overlays will be used to minimize damage to adjacent vegetation.**
- A monitoring plan will be established to evaluate the success of mitigation measures. Such mitigation measures will be modified as needed to ensure successful mitigation. **The monitoring plan** will be **developed with** the appropriate regulatory authorities (i.e., U.S. Army Corps of Engineers, U.S. Forest Service, NRCS, FWS and Utah Division of Wildlife Resources).

Wildlife Resources

- To the extent feasible, **project facilities** will be located and constructed to avoid or minimize the removal of large trees **and sensitive wildlife habitat.**
- To the extent feasible, construction activities on or around important game or non-game species habitat (e.g., deer fawning areas) will be scheduled to avoid the periods of greatest use (**deer fawning typically occurs during June to July**).
- **Materials excavated during construction will be stored within the construction right-of-way boundary in sensitive wildlife habitats.**

Impacts on wildlife resources also will be avoided and minimized by hazardous materials procedures included under the health and safety Environmental Commitments, and the Environmental Commitments related to revegetation and erosion control, threatened, endangered and candidate species and wetlands.

- **Those involved with project construction and its oversight shall be informed through an educational program that: the golden eagle is protected by the Eagle Protection Act and the Migratory Bird Treaty Act.**
- **In the event dead, injured or sick golden eagles are encountered the FWS Division of Law Enforcement (801-975-3632) and the Utah Division of Wildlife Resources (801-489-5678) shall be promptly notified for guidance on their care, preservation and transport.**
- **Notification of dead, injured or sick golden eagles also shall be given to the Utah State Field Supervisor, of the FWS Ecological Services office (801-524-5001) within three days of discovery.**
- **The CUWCD will enter into an agreement with the Natural Resources Conservation Service and Wasatch Soil Conservation District for the purpose of assuring that unavoidable significant losses to fish and wildlife caused by the Tri-Valley Watershed Project will be compensated for by the Tri-Valley Watershed Project. The Agreement will be in place prior to the CUWCD awarding any construction contracts for WCWEP distribution pipelines.**

Miscellaneous Environmental Commitments

- **Scrap materials will be removed from work areas after construction is completed.**
- **Roads in the upper Strawberry River basin associated with the DIC diversion facilities would be closed. The roads leading to the dams and the two-wheel track roads used for canal maintenance will be ripped and revegetated. Signs reading "Closed to Motorized Vehicles" will be posted in appropriate locations. The roads to the dams would be reshaped to natural slopes in certain areas to provide drainage and to discourage use by unauthorized vehicles.**
- **Construction workers will be careful to avoid the escapement of wet concrete into waterways and other sensitive fish and wildlife habitat.**
- **Concrete batch plants will be located in areas away from waterways and sensitive fish and wildlife habitat.**
- **Concrete trucks and equipment will be washed only in areas that will not impact streams or sensitive fish and wildlife habitat.**
- **Project personnel will not be allowed to have firearms in possession while on construction sites.**
- **Parking and storage areas used during construction, operation and maintenance will be limited to disturbed areas that have little or no value to fish and wildlife.**
- **Maintenance of mobile equipment used during construction or maintenance will be performed in areas that have little or no value to fish and wildlife.**

Appendix 2

U.S. Fish and Wildlife Service Letter of Concurrence of "No Effect"

United States Department of the Interior
FISH AND WILDLIFE SERVICE
UTAH FIELD OFFICE
LINCOLN PLAZA
145 EAST 1300 SOUTH, SUITE 404
SALT LAKE CITY, UTAH 84115

In Reply Refer To
(CO/KS/NE/UT)

July 11, 1996

Don A. Christiansen
Central Utah Water Conservancy District
355 West 1300 South
Orem, Utah 84058

Dear Mr. Christiansen:

This is in response to your letter of May 15, 1996 concerning the Biological Assessment for the Wasatch County Water Efficiency Project/Daniels Replacement Project of the Bonneville Unit, Central Utah Project. We have reviewed the assessment and concur with your finding of "no effect" for the following threatened or endangered species:

peregrine falcon
whooping crane
June sucker
humpback chub
razorback sucker
Ute ladies'-tresses
Utah valvata snail
Colorado squawfish
bonytail chub

The Service also concurs with a "no effect" determination for the bald eagle provided that the 3.6 miles of power lines to the pumping stations are constructed in a manner that conform with criteria set forth in the publication "Suggested Practices for Raptor Protection on Power lines - The State of the Art in 1981", Raptor Research Report No. 4, Raptor Research Foundation, Carpenter St. Croix Nature Center, 12805 St. Croix Trail, Hastings, Minnesota 55033.

If the District agrees to follow the criteria outlined above, the Service concurs with a "no effect" determination and therefore believes no biological opinion would be required for the subject project.

Sincerely,

Reed E. Harris

Reed E. Harris
Field Supervisor

cc: Program Director, CUP Completion Act, Provo, Utah
Executive Director, Utah Reclamation Mitigation and Conservation Commission, Salt Lake City, Utah

Appendix 3

Cultural Resources Programmatic Memorandum of Agreement

PROGRAMMATIC AGREEMENT AMONG
THE UNITED STATES DEPARTMENT OF INTERIOR,
THE CENTRAL UTAH WATER CONSERVANCY DISTRICT,
THE UTAH RECLAMATION MITIGATION AND CONSERVATION COMMISSION,
THE UNITED STATES DEPARTMENT OF AGRICULTURE FOREST SERVICE,
THE UTAH STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
REGARDING THE PROPOSED WASATCH COUNTY WATER EFFICIENCY PROJECT AND DANIEL'S REPLACEMENT PROJECT, UTAH

WHEREAS, the United States Department of the Interior (DOI) has responsibilities and authorities for carrying out the provisions of the Central Utah Project Completion Act of 1992, including funding, oversight of all activities and approval of all documents related to the National Environmental Protection Act, and compliance with Section 106 of the National Historic Preservation Act (16 U.S.C. 407f) (the Act) for the proposed Wasatch County Water Efficiency Project and Daniel's Replacement Project (WCWEP/DR Project or project), features of the Central Utah Project; and

WHEREAS, pursuant to Section 205 of Central Utah Project Completion Act (Completion Act) and an implementing agreement between DOI and the Central Utah Water Conservancy District (CUWCD) dated August 11, 1993, DOI has delegated many of its responsibilities to and contracted for completion of these responsibilities by CUWCD, which is considered as a Federal agency for these purposes under Section 205(b) of the Completion Act, even while DOI retains oversight authority and responsibilities; and

WHEREAS, CUWCD and DOI have determined that the WCWEP/DR Project may have an effect upon projects included in or eligible for inclusion in the National Register of Historic Places and have consulted with the Utah State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Sec. 800; and

WHEREAS, CUWCD and DOI have elected to comply with Section 106 of the Act through execution and implementation of a Programmatic Agreement (PA) pursuant to 36 CFR Sec. 800.13 to facilitate decision making regarding the final alternative for the WCWEP/DR Project and to streamline the review process for the identification, evaluation, and treatment of historic properties; and

WHEREAS, CUWCD is acting as lead agency for the other agencies involved in the WCWEP/DR Project, including the Forest Service, which has jurisdiction for some lands related to this project; and

WHEREAS, CUWCD may delegate some of the historic preservation work called for under this Agreement to the Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission); and

NOW, THEREFORE, the DOI, the CUWCD, the Mitigation Commission, the Forest Service, the Utah SHPO, and the Council agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historical properties.

STIPULATIONS

DOI shall ensure that the CUWCD carries out the following stipulations:

I. Identification of Historic Properties

A. The CUWCD will determine the Area of Potential Effect (APE) for the project in consultation with the Utah SHPO in accordance with 36 CFR 800.2(c). In order to define the APE, the CUWCD will identify potential interested persons and seek information from them related to the undertaking's effect on historic properties. As part of this effort, the CUWCD will consult with Indian tribal groups to determine if the project might affect properties of cultural or religious significance to them. In defining the APE, the CUWCD will consider potential direct, indirect, and cumulative effects to historic properties and their historic contexts, including visual and audible effects.

B. The CUWCD shall conduct a cultural resources survey of the APE to identify historic properties in a manner consistent with the *Secretary of the Interior's Standards and Guidelines for Identification* (48 CFR 44720-23) and taking into account NPS publication, *The Archeological Survey: Methods and Uses* (1978 GPO stock #024-016-00091) and guided by *National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties*. The survey methods will take into account problems with the surface being obscured, such as through the recent deposition or agricultural practices. In such cases, shovel tests or other techniques will be proposed. The CUWCD will inventory the APE regardless of surface ownership to identify all classes of properties of the historic and prehistoric periods included in or eligible for the National Register of Historic Places or that meet the National Register Criteria (36 CFR Sec. 60.4). In consultation with Indian tribal groups, the CUWCD will identify properties of cultural or religious significance to them.

C. The CUWCD, in consultation with the Utah SHPO, shall evaluate properties identified in the survey in accordance with 36 CFR 800.4. If properties included in or eligible for the National Register of Historic Places or meeting the National Register Criteria (36 CFR 60.4) are identified, the CUWCD shall comply with 36 CFR 800.5.

D. The CUWCD shall provide site forms and a report resulting from this project to the Utah SHPO in a form acceptable to the Utah SHPO for inclusion in their database.

E. The CUWCD shall ensure that historic properties are adequately evaluated and archaeologically tested to determine their eligibility to the National Register of Historic Places, as per the guidelines in Appendix A of the Agreement.

II. Treatment Plans for Historic Properties

A. Standards for Treatment Plans:

The preferred treatment alternative is avoidance of effects on historic properties by project relocation or redesign. When avoiding adverse effects is not feasible or prudent, the CUWCD will develop Treatment Plans to set forth means to minimize or mitigate such effects on historic properties. The CUWCD will develop Treatment Plans for the largest possible area affected by the project that is acceptable to the CUWCD and the Utah SHPO. The Treatment Plans will be consistent with the principles in Part I and recommendations in Part II of the Council's *Treatment of Archaeological Properties: A Handbook (*Appendix B of this Agreement) and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (Federal Register, Vol. 48, No. 190, September 29, 1983, pp. 44716-44742) (Appendix C of the Agreement). Treatment Plans will take into account existing information to the maximum degree possible. The CUWCD will consult with interested members of the public in developing and implementing treatment plans, particularly with Indian tribal groups regarding historic properties of traditional cultural or religious significance to them. Treatment Plans will be developed in accordance with the following:

B. Contents of Treatment Plans will include, but not be limited to:

1. Specification of all historic properties to be affected by the project for which the effects are proposed to be avoided, including a description of properties and reasons for which the properties are included in or eligible for inclusion in the National Register of Historic Places or meet the National Register Criteria and a description of the proposed project redesign or relocation to avoid effects;

2. Specification of all historic properties or portions of properties to be affected by the project, including a description of such effects, a description of the reasons for which properties are included in or eligible for the National Register of Historic Places or meet the National Register Criteria, and an explanation of the treatments proposed and justification for the chosen treatment alternative;

3. Specification of all historic properties that will be affected by the project for which no treatment is proposed, including a description of the reasons for which they are included in or eligible for the National Register of Historic Places or meet the National Register Criteria, a description of the effects of the project on the properties, and a justification or rationale for not proposing any treatment to the historic properties;

4. Specification of all historic properties of cultural or religious significance to Indian tribal groups that will be affected by the project, including a description of the properties, an explanation of the treatments proposed, evidence of consultation with the involved tribal group, and justification of alternative treatments proposed;

5. An Archaeological Research Design;

   For historic properties eligible for the National Register under criterion D (36 CFR 60.4) and for which archaeological data recovery is the proposed treatment, the CUWCD will develop an Archaeological Research Design that specifies and explains the research questions to be answered by the data recovery efforts, the data needed to answer the questions posed including the sites and portions of sites to be investigated, and the methods to be used to address the research questions posed. The CUWCD will develop data recovery plans that are acceptable for each historic property subject to data recovery. Acceptable treatment options may include sampling of archaeological sites that contain repetitive data and/or concentrating data recovery on sites or portions of sites that may yield the most significant information about history or prehistory of central Utah. In addition, the CUWCD will provide explanations or justifications for the reasons for and appropriateness of the chosen research questions, data needs, specific sites or portions of sites proposed for data recovery, and methods proposed.

6. Construction Monitoring and Open-Trench Inspection

   The CUWCD will develop a plan for monitoring construction and inspecting open trenches within the project area that are likely to contain historic properties included in or eligible for the National Register of Historic Places but that are buried sufficiently to prevent their identification at the survey stage (cf. Subsection I.B., above). In the plan, the CUWCD will specify the areas proposed for construction monitoring and open-trench inspections, justify why the areas are proposed, describe how the monitoring and inspection will be carried out (including, but not limited to, what arechaeological evidence will be sufficient to result in a request for construction work stoppage), describe the historic properties expected to be found and their archaeological or cultural or religious significance, and explain and justify treatments propoesed for all historic properties potentially identified through the monitoring or inspection by types or classes of prehistoric sites or other historic properties (e.g., functional or morphological or cultural or temporal affiliation, etc.). In the plan, the CUWCD also will specify how the archaeologist and construction personnel will work together.

C. Review of Treatment Plans

The CUWCD shall afford the Council and the Utah SHPO 15 working days to review Treatment Plans. If the Council or Utah SHPO disagree with the Treatment Plans or the project's potential effects on a historic property included in or eligible for the National

Register, the CUWCD and DOI will seek to resolve the objection in accordance with stipulation X below. Cover letters transmitting Treatment Plans will inform the signatories that the Plans are being forwarded in accordance with this Agreement, which provides for review within 15 working days.

III. Conduct of Construction Monitoring and Open-Trench Inspections

The CUWCD will ensure that construction activities that could affect a historic property are stopped until the CUWCD, in consultation with the Utah SHPO, determines the National Register eligibility of the property as per 36 CFR 60.4. Also, National Register eligibility will be determined consistent with the research questions outlined in the archaeological research design (subsection II.B.5., above) and the construction monitoring and open-inspection portion of the Treatment plan (subsection II.B.6., above). The CUWCD will record properties identified during the monitoring or open-trench inspections to a level sufficient to allow determinations of whether a property meets the National Register Criteria (36 SFR Sec.60.4). Emergency consultations or a meeting will be held within five working days of the discovery of the property. If the property is determined to be eligible for the National Register, the CUWCD and the Utah SHPO will decide on a course of treament consistent with the recommendations in the Treatment Plan. All construction monitoring and open-trench inspections will be carried out by qualified professional archaeologists as per stipulation IX, below. All construction monitoring and open-trench inspections and treatment of historic properties identified as the result of such monitoring and inspections will be carried out in such a way as to minimize or avoid delays to construction to the extent feasible and prudent.

IV. Reporting on the Investigations of Historic Properties

A. The CUWCD shall ensure that draft reports resulting from actions pursuant to this Programmatic Agreement will be provided to the signatories for review prior to their final acceptance by the CUWCD. The CUWCD shall ensure that all such reports are responsive to contemporaty professional standards, and to the *Department of the Intorior's Format Standards for Final Reports of Data Recovery Program* (42 CFR 5377-79). The CUWCD will take into account the comments provided by the signatories in preparing the final reports. The CUWCD will then submit final reports to all signatories, the National Technical Information Service, and local libaries to be determined in colsultation with the Utah SHPO. The CUWCD may provide precise locational data only in a separate appendix if it appears that its release could jeopardize the arehaeological sites.

B. The CUWCD will develop a single formal report that describes and analyzes all aspects of survey, testing, and evaluation of historic properties. The CUWCD will develop a second formal report that describes and analyzes the treatment of historic properties. The CUWCD will develop a third formal report that describes and analyzes all aspects of the monitoring of construction and open-trench inspection, evaluations of properties identifed through the monitoring and inspection, and all treatment of such properties. Finally, the

CUWCD will develop a final project report that synthesizes all work undertaken pursuant to this Agreement and the results of such work. The CUWCD will develop all reportrs and submit them for review to the signatories to this Agreement according to a schdeule developed by CUWCD and the Utah SHPO. The CUWCD will work out the format, content, and scheduling of the reports in consultation with the Utah SHPO.

V. Evaluation of Historic Properties After Completion of the Historic Preservation Work

The CUWCD will nominate historic properties to the National Register of Historic Places if those properties are evaluated as particularly unique or significant through consensus decision between the CUWCD and the Utah SHPO, after completion of all other work called for in this Agreement,

VI. Policy on Lanowner Denial of Access for Historic Preservation Work

The CUWCD will identify, evaluate, and treat historic properties included in or eligible for the National Register in accordance with this Agreement regardless of surface ownership. Should access be denied to any non-Federal lands to carry out the requirements of this Agreement, the CUWCD will take all reasonable steps to obtain such access., Should further efforts fail to obtain access, the CUWCD will consult with the Utah SHPO and the Council in accordance with 36 CFR 800.4 to determine what steps, if any, must be taken to satisy the intent of this Agreement. Until such consultation is complete, no party in the dispute will take or sanction any actions that would or could have an adverse effect on a historic property that may be located on the property to which access has been denied.

VII. Curation

All collected cultural materials will be stabilized, labeled, and catalogued. The CUWCD will curate materials in accordance with 36 CFR Part 79 by the Utah Museum of Natural History at the University of Utah in Salt Lake City, or other authorized Utah curation facility. The disposition of cultural materials from private lands will be determined by the landowner, after all analysis is complete. If the landowner wishes the materials to remain in government possession, they will be curated in accordance with 36 CFR Part 79 as outlined above.

VIII. Human Remains

The CUWCD will develop a plan for the treatment of human remains in consultation with Indian tribal groups having concerns about the project area. The CUWCD will comply with the the Native American Graves Protection and Repatriation Act (NAGPRA). If human remains are located during implementation of all work in the vicinity of the remains will be stopped immediately and involved Indian tribal groups will be contacted.

IX. Personnel Qualifications

Professionals carrying out the terms of this Agreement will have appropriate expertise and qualifications as outlined in the *Secretary of the Interior's Professional Qualification Standards for Archaeology and Historic Preservation* (48 FR 44738-9).

IX. Dispute Resolution

Should any party to this Agreement have an objection regarding the implementation of this Agreement, CUWCD shall consult with the objecting party to resolve the objection. If the objection cannot be resolved through consultation, DOI shall forward all documentation relevant to the objection to the Council, including CUWCD and DOI's proposed response to the objection. Within 30 days after receipt of all pertinent documentation, the Council shall excercise one of the following options:

A. Provide CUWCD and DOI with recommendations, which DOI shall take into account in reaching a final decision regarding its response to the objection; or

B. Notify CUWCD and DOI that the objection will be referred for comment pursuant ot 36 CFR 800.6 (b), and proceed to refer the objection and comment. The resulting comment shall be taken into account by DOI in accordance with 36 CFR 800.6(c)(2) and Section 110(1) of the Act.

XI. Failure to Carry Out the Terms of this Agreement:

Failure to carry out the terms of this Agreement requires that the DOI, or CUWCD on its behalf, again request the Council's comments in accordance with 36 CFR Part 800. If DOI or CUWCD cannot carry out the terms of this Agreement, no actions shall be taken, or sanctioned that would result in an adverse effect with respect to historic properties which may be included in or eligible for the National Register of Historic Places.

XII. Amendment to this Agreement:

If any of the signatories to this Agreement determines that the terms of this Agreement cannot be met or believes that a change is necessary, that signatory shall immediately request the consulting parties to consider an amendment or addendum to this Agreement. Such an amendment or addendum shall be executed in the same manner as the original Agreement.

Execution of this Programmatic Agreement evidences that CUWCD, DOI, and the Forest Service have afforded the Council an opportunity to comment on the Wasatch County Water Efficiency Project/Daniel's Replacement Project, a feature of the Central Utah Project, and its effects on historic properties, and that CUWCDand DOI have taken into account the effects of the undertaking on historic properties.

APPENDIX A

Evaluation and Testing of Cultural Properties

Preliminary evaluations to determine if subsurface properties are potentially eligible for the National Register will be based on an examination of soil development for depositional situations amenable to the preservation of subsurface archaeological deposits through surface evidence, shovel probing or excavation units. If acceptable to the Federal Agency responsible, in consultation with SHPO, subsurface cultural properties appearing to be eligible for the National Register or to have a soil depositional environment amenable to the preservation of such subsurface archaeological deposits will be considered as eligible to the National Register. Adverse effects to properties determined to be eligible for the National Register in accordance with this subsection or determined eligible under subsections III.C. or III.D., above, in consultation with the SHPO, may be avoided by project relocation where feasible and prudent or excavated to preserve the important archeological data.

The identification, survey and testing information, including the preliminary evaluations resulting from subsection III.B., above, will be reviewed by the CUWCD and the SHPO to determine if such properties are eligible for the National Register. If there is not sufficient information to make such a determination, strategies acceptable to the SHPO for acquiring needed information will be developed and implemented.

If the CUWCD and the SHPO disagree regarding whether cultural properties are eligible for the National Register, the CUWCD will seek a determination of eligibility from the Keeper of the National Register of Historic Places in accordance with 36 CFR Part 63. The Keeper's determination will be considered final for the purposes of this Agreement.

DEPARTMENT OF INTERIOR, CENTRAL UTAH PROJECT COMPLETION ACT, PROGRAM DIRECTOR

By: Ronald Johnston Date: 8-22-96 Approved: Christopher B Rich
Field Solicitor

UTAH RECLAMATION MITIGATION AND CONSERVATION COMMISSION, CHAIRMAN

By: Don A Christiansen Date: 9-5-96

CENTRAL UTAH WATER CONSERVANCY DISTRICT, PRESIDENT

By: Gary D. Palmer Date: 9-9-96

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE

By: For Peter Karp Date: 20 Aug 1996

UTAH STATE HISTORIC PRESERVATION OFFICER

By: for SHPO Date: 9/12/96

THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: Robert D. Bush Date: 9-27-96

Appendix 4

List of Fish and Wildlife Service Recommendations from the Draft Fish and Wildlife Coordination Act Report

Recommendations

In view of the foregoing, our recommendations are as follows:

1. Provisions for fish passage facilities at Timpanogos Diversion be deleted from project plans.

2. Project plans be modified to include upstream and downstream fish passage facilities at the Wasatch Canal, and that the FWS and UDWR be afforded opportunities to review and comment on designs for this facility.

3. The following environmental commitments which supplement or modify the proposed Environmental Commitments be adopted:

    - If significant losses of fish are experienced through the outlet works at Jordanelle Dam, a fish screen shall be installed to prevent fish passage into Timpanogos Canal. Designs for the fish screen shall be coordinated with the FWS and UDWR.

    - Investigations shall be conducted to determine significance of the loss of fish exiting the Provo River via Wasatch Canal and designs for features to prevent such losses as may warrant alleviation shall be coordinated with the FWS and UDWR.

    - Construction in upper Strawberry Valley streams would be minimized during mid-May through mid-July, when cutthroat trout spawning and egg incubation could be impacted.

    - A survey shall be conducted prior to construction activities to identify leatherside chub population centers and learn more about the status of the species.

    - Areas outside of the impact area of influence within Heber Valley that contain populations of leatherside chub that would benefit from habitat enhancement would be enhanced and protected in accordance with an agreement to be finalized with the FWS and UDWR.

    - In the event of inadvertent spills of toxic substances the following agencies shall be promptly notified: the National Response Center, U.S. Coast Guard Headquarters, Washington, D.C. (telephone 1-800-424-8802) and the Utah Environmental Response and Remedial Division, 168 North 1950 West, P.O. Box 144840, Salt Lake City, Utah 84114-4840 (telephone 1-801-536-4100).

- Future land uses in easement ROWs will exclude the replacement of buildings and any uses that impair water quality.

- Noxious weed removal in the vicinity of Ute ladies'-tresses orchid or spotted frog habitats will be done in a manner that avoids or minimizes impacts on these species.

- A program to educate contractors and others in field positions on the identification of undesirable vegetation shall be implemented. The participants shall be provided with photographs or drawings of these plants and informed of procedures for reporting locations where they are found.

- Where impacts to wetlands cannot be avoided, impacts will be minimized to the extent possible and mitigation approaches will be reviewed with the U.S. Army Corps of Engineers, FWS, and UDWR.

- The CUWCD shall work closely with NRCS, FWS,and UDWR to develop plans for the Tri-Valley Watershed Project that minimize impacts to fish and wildlife and related resources.

- The CUWCD shall assure that measures necessary to compensate for unavoidable losses of fish and wildlife and related resources caused by the Tri-Valley Watershed Project are implemented.

- Where construction must cross sensitive plant and/or fish and wildlife habitats, storage sites for excavated materials will be confined within the minimum construction right-of-way-boundary.

- Those involved with project construction and its oversight shall be informed through an educational program that the golden eagle is protected by the Eagle Protection Act and the Migratory Bird Treaty Act.

- In the event dead, injured or sick golden eagles are encountered the FWS Division of Law Enforcement (801-975-3632) and the Utah Division of Wildlife Resources (801-489-5678) shall be promptly notified for guidance on their care, preservation, and transport.

- Notification of dead, injured or sick golden eagles shall be given to the Utah State Field Supervisor, of the FWS Ecological Services office (801-524-5001) within three days of discovery.

- An annual report that summarizes encounters with dead, sick and injured golden eagles shall be provided to FWS. The date, time and probable or confirmed cause of injury, mortality or sickness, and other pertinent information shall be included in the report.

- The CUWCD shall work with the Spotted Frog Conservation Agreement Team in: (1) arranging for proper surveys of spotted frog habitats in areas of potential project impacts; (2) identifying measures needed to avoid project associated impacts to the spotted frog; and (3) implementing such measures as may be required to avoid project related impacts.

We appreciate the assistance that your staff has provided throughout planning of the WCWEP/DRP. Please continue to keep us informed of any changes that may be made in plans and results of your monitoring of environmental resource values.

Sincerely,

Reed E. Harris

Enclosure

bcc: Project file
Reading file

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